



# Operation Instructions

Spitfire 65/90 Extreme

English





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## **WEEE regulations**

Environmental information  
*Disposal of your old product*



Your product is designed and manufactured with high quality materials and components, which can be recycled and reused.

When this crossed-out wheeled bin symbol is attached to a product it means the product is covered by the European Directive 2002/96/EC

Please inform yourself about the local separate collection system for electrical and electronic products.

Please act according to your local rules and do not dispose of your old products with your normal household waste. The correct disposal of your old product will help prevent potential negative consequences for the environment and human health.



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# 1 SAFETY INSTRUCTIONS

## 1.1 INTRODUCTION







This chapter explains the meaning of safety terms for personnel who operate this equipment, important safety instructions, and the positions of the warning labels.

### Important

**Be sure to follow all instructions and warnings in this manual when using the equipment.**

## 1.2 WARNINGS, CAUTIONS AND NOTES

Safety terms in this manual and the contents of warning labels attached to the printer are categorized into the following three types depending on the degree of risk (or the scale of accident). Read the following explanations carefully and follow the instructions in this manual.

Safety terms	Details
 <b>Important</b> 	Must be followed carefully to avoid death or serious bodily injury
 <b>Caution</b> 	Must be observed to avoid bodily injury (moderate or light) or damage to your equipment
 <b>Notes</b> 	Contains important information and useful tips on the operation of your printer

## 1.3 IMPORTANT SAFETY INSTRUCTIONS

General safety instructions that must be observed to use the equipment safely are explained below.

- Do not place the printer in the following areas. Doing so may result in the printer tipping or falling over and causing injury.
  - Unstable surfaces
  - Sloping floors
  - Areas subject to vibration by other equipment
- Do not stand on or place heavy objects on your printer. Doing so may result in the printer tipping or falling over and causing injury.
- Do not cover the ventilation hole of your printer with cloth, such as a blanket or table cloth. Doing so could obstruct ventilation and cause fire.
- Do not place the printer in humid and dusty areas. Doing so may result in electrical shock or fire.
- Do not use a damaged power cable. Doing so may result in electrical shock.
- Do not attempt to plug in electrical plugs with wet hands. Doing so may result in electrical shock.
- Do not connect earth cables in the following areas.
  - Gas pipes → Doing so may cause fire or an explosion.
  - Earth terminals for telephone line or lightning rod → Doing so may cause a large flow of voltage if lightning occurs.
  - Water pipes or faucets → If there is a plastic part in the pipe, the earth will not work properly.
- Do not insert or drop metal or inflammable objects into openings, such as ventilation outlets. Doing so may result in electrical shock and fire.



- Stop using your printer if a liquid has been spilled into it. This may cause electrical shock or fire. Power OFF the printer as soon as possible, unplug the power cord and contact your local MUTOH dealer.
- Be sure to use the attached cable. Otherwise, electrical shock or fire may occur.
- Be sure to use the specified voltage (AC 100 V to 120V, or AC 220V to 240V). Otherwise, electrical shock or fire may occur.
- Use electricity directly from a power outlet (AC 100 V to 120V, or AC 220V to 240V). Do not put many loads on one electrical output. Otherwise, heat may be generated and cause fire.
- Be sure to use an outlet with an earth terminal and use the terminal correctly. Otherwise, electrical shock or fire may occur.
- Follow the instructions below when handling the power cable.
  - Do not modify the cable.
  - Do not put heavy objects on the cable.
  - Do not bend, twist or pull the cable.
  - Do not wire the cable near equipment that generates heat.
- Follow the instructions below when handling the power plug. Otherwise, fire may occur.
  - Wipe away dust and any other residue before inserting the plug.
  - Ensure that the plug is firmly inserted as far as it can go.
- When handling the foot switch, be aware of the following:
  - Do not place anything heavy on the foot switch.
  - Do not bend the cable of the foot switch with force and do not pull.
  - Do not place the foot switch near thermal devices.
- When handling ink cassettes, be careful that ink does not get in your eyes or on your skin. However, if this happens, flush immediately with water and wash skin with soap. Otherwise, your eyes may become congested or inflamed slightly. If you feel discomfort, consult a doctor immediately.
- Do not disassemble ink cassettes. Otherwise, ink may get in your eyes or on your skin.
- Spitfire Mild Solvent Inks
  - **General information:**  
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
    - After inhalation:  
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.  
In case of unconsciousness, place patient stably in side position for transportation.
    - After skin contact: the product does not irritate the skin.
    - After eye contact: Rinse opened eye for several minutes under running water.
    - After swallowing: medical advice or consult doctor.
- Be careful not to pinch your fingers when opening and closing the cover of the ink compartment.
- Be careful not to pinch your fingers when opening and closing the front cover.
- Follow the instructions below when connecting the network interface cable. Otherwise, electrical shock or fire may occur.
  - Do not touch the connector.
  - Do not connect the network cable connector which has not the same specifications as the interface board.
- When cutting the roll media, be careful of the following. Incorrect handling can result in injury to the hands and fingers from the razor blade.
  - When holding the media, do not place fingers over the media cut groove.
  - Move the razor blade slowly along the media cutting groove.



- Do not use thinner, benzene, alcohol or other active agents. Doing so may result in damage or paint peeling from the casing.
- Be careful not to spill water inside the printer. Doing so may result in a short circuit.
- Be careful not to touch the heaters during or after operation. Doing so may result in burns.
- Only use Spitfire Mild Solvent Ink and appropriate cleaning liquid.
- Never open the covers fixed with screws, except the left cover. Doing so may result in electrical shock or a malfunctioning of the printer.
- Do not touch the cutter blade. Doing so may result in bodily injury.
- Do not cut hard objects or drop the cutter. Doing so may damage or chip the cutter blade.
- Do not bend or pull the waste fluid tube. Doing so may cause that the waste fluid will leak out and malfunction of the product.
- Do not touch the cleaning wiper or the head cap unit with bare hands. Use a dust free cloth and gloves to clean.
- Do not tilt the printer, stand it against a wall or turn it upside down. Doing so may cause ink to leak inside the printer. Movement after transport is also not covered by the warranty.
- When installing options, do not touch the elements on the circuit board. The elements on the boards can be very hot and can cause burns.
- Have four or more people unpack and assemble the printer.
- When lifting the printer out of the packing box, be sure to remove the vinyl cover first, and then grab the holding grips on the sides of the printer. Lifting the printer with the vinyl cover on may cause your hands to slip and drop or damage the printer.
- Have two or more people transport the printer.
- Ensure that the plug has been disconnected from the power socket when it is not to be used for a long time.
- Earth wires must be connected to wires or terminals that fulfil the conditions below.
  - Earth terminals of power sockets
  - Earth wires with copper morsel that is at least 650 mm under the ground
- Earth wires must be connected to wires or terminals that fulfil the conditions below.
- Keep the printer horizontally during transportation.
- Be sure to do the following before attaching options.
  - Power OFF the printer.
  - Unplug the power cord from the socket.
  - Unplug cables connected to the printer. Otherwise, damage to the printer or your computer may occur.
  - Remove electrostatic charge from your clothes and body by touching the metal parts of the printer.
  - Electronic components such as the memory may malfunction if exposed to an electrostatic charge.
- The equipment that you bought requires the extraction and use of natural resources for its production. It may contain hazardous substances for the health and the environment.  
In order to avoid the dissemination of those substances in our environment and to diminish the pressure on the natural resources, we encourage you to use the appropriate take-back system. Those systems will re-use or recycle most of the materials of your end life equipment in a sound way.  
If you need more information on the collection, re-use and recycling systems, please contact your local or regional waste administration.

## 1.4 WARNING LABELS

The handling, attachment locations, and types of warning labels are explained below. Warning labels are attached on areas which require attention. Read and understand the positions and contents thoroughly before performing your work.

### 1.4.1 Handling the warning labels

Be sure to note the following when handling the labels.

#### ⚠ Notes ⚠




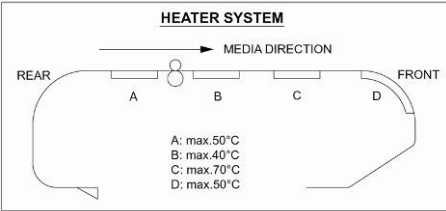

- Make sure that all labels can be recognized. If text or illustrations cannot be seen clearly, either clean or replace the label.
- When cleaning labels, use a cloth with water or neutral detergent. Do not use a solvent or gasoline.
- If a warning label is damaged, lost or cannot be recognized, replace the label. When replacing warning labels, contact your local MUTOH dealer.

### 1.4.2 Locations and types of warning labels

The locations of warning labels are shown below.

#### 1.4.2.1 Location and types of warning labels on front part.



1		2	
4-10		5	<p><b>HEATER SYSTEM</b></p>  <p>A: max. 50°C B: max. 40°C C: max. 70°C D: max. 50°C</p>
6-9		7	<p><b>CAUTION      VORSICHT      ATTENTION</b></p> <ul style="list-style-type: none"> <li>&gt; Do not open the front cover or touch the media during printing. This will result in poor image quality.</li> <li>&gt; If no printing is to be done for some time, remove the media and put the pressure rollers in the up position. Otherwise the media may lift up and become wrinkled and you will not be able to obtain good printing results.</li> <li>&gt; Öffnen Sie während des Druckens die Frontabdeckung nicht und berühren Sie das Druckmaterial nicht.</li> <li>&gt; Wenn Sie während längere Zeit den Drucker nicht benutzen, nehmen Sie das Druckmaterial heraus und stellen Sie die Drucksrollen in die oberste Position. Sonst kann sich das Druckmaterial aufheben und zerknittern und demzufolge erzielen Sie keine gute Druckergebnisse mehr.</li> <li>&gt; N'ouvrez pas le couvercle quand l'imprimante est en train d'imprimer. Ne touchez pas non plus le papier afin d'éviter que la qualité s'aggrave.</li> <li>&gt; Si vous ne comptez pas imprimer pendant un certain temps, retirez le papier et mettez les rouleaux de pression en position levée. Sinon, le support risque de se soulever et de se froisser et vous n'obtiendrez pas de bonne qualité d'impression.</li> </ul>

3

**Weekly Maintenance**

>

Cleaning around the heads

**Other Maintenance**

>

Change rollers

>

Change upper springs of clapping station

>

Replace sponge in coating box

Every Month

Every Month

Biweekly

Please refer to the User's Guide or the in the box documentation for more details.

**Daily Maintenance**

>

Cleaning the rollers

>

Flushing the caps


>

Cleaning around the caps

8

Number of colours		Slot number of ink cassette							
		1	2	3	4	5	6	7	8
4	2x4 colours	Black	Yellow	Cyan	Magenta	Magenta	Cyan	Yellow	Black
6	1x6 colours	Black	Cyan	Transition Liquid	Transition Liquid	Yellow	Magenta	Light Cyan	Light Magenta

#### 1.4.2.2 Location and types of warning labels on back part.

No.	Type
3	<p><b>CAUTION</b></p> <p>THIS UNIT HAS TWO POWER SUPPLY CORDS, WHEN WINDING UNIT IS PROVIDED. TO REDUCE THE RISK OF ELECTRICAL SHOCK, DISCONNECT ALL POWER SUPPLY CORDS BEFORE SERVICING.</p>
4	



## 2 PRODUCT OVERVIEW

### 2.1 PART NAMES AND FUNCTIONS

Part names and functions are explained below.

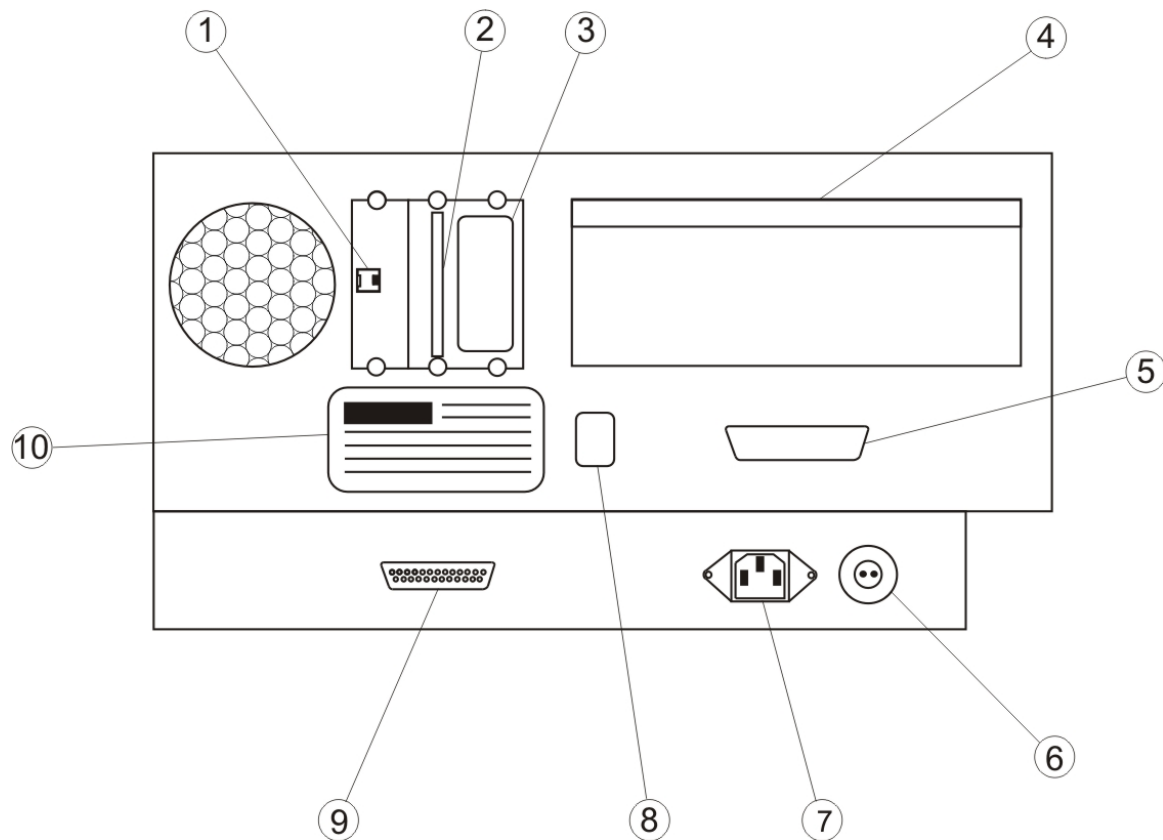
#### 2.1.1 Front



No	Name	Function
1	Heater plate	Supports and heats the media during printing.
2	Front cover	Keeps the operator safe from the drive parts of the printer while it is operating. Only open and/or close the cover to perform following operations: <ul style="list-style-type: none"> <li>Media setting and replacement</li> <li>Cutter blade replacement</li> <li>Cleaning the cleaning wiper</li> </ul>
3	Carriage	Drives and holds the print heads.
4	Operation panel	To control the printer.
5	Ink compartment cover	Covers the ink compartment.
6	Stand	Carries the main body.
7	Waste bottle assembly	Collects the waste fluid.
8	Winder*	Rolls up the roll media.
9	Front tension system	Keeps the media under tension.
10	Left maintenance covers	Covers the maintenance areas.

\* Only a 90" model comes standard with an Unwinder/Winder 100 system. For a 65" model, one has to choose between a [Tensioning winder 30](#) or an [Unwinder/Winder 100](#).

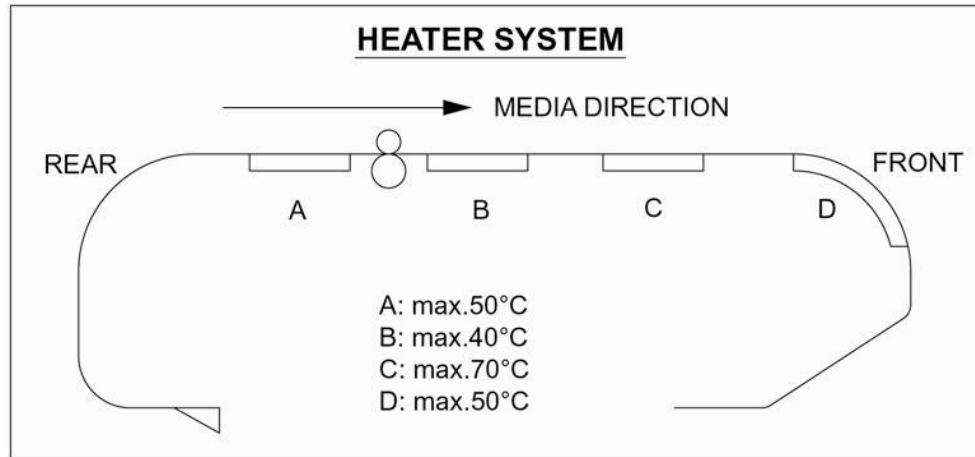
## 2.1.2 Rear



No	Connection
1	Ethernet connector
2	Card reader slot
3	SmartChip label
4	HardDisk bracket cover
5	Centronics connector
6	Foot switch connector
7	Power inlet
8	Environmental label
9	DB-25 connector
10	ID label

## 2.1.3 Heater system

Under the print platforms, heater strips are attached. Each heater can be set separately. Please refer to the table below to know the function of each heater.



Heater element	Temperature	Function
Pre-heater (Heater A)	20 – 50°C	<ul style="list-style-type: none"> <li>Open the pores to make the media more receptive for Spitfire Mild Solvent Ink.</li> </ul>
Fixer (Heater B)	20 – 40°C	<ul style="list-style-type: none"> <li>To establish optimum fixation onto the media (coated and uncoated).</li> <li>Optimizes the dot gain control.</li> </ul>
Post-Fixer (Heater C)	20 – 70°C	<ul style="list-style-type: none"> <li>The post-fixer finalizes the fixation process and helps to make the prints touch-dry.</li> </ul>
Dryer (Heater D)	20 – 50°C	<ul style="list-style-type: none"> <li>The dryer completes the drying for compatibility with the take-up in combination with higher output speeds.</li> <li>Stickiness of printed banner materials is improved.</li> </ul>

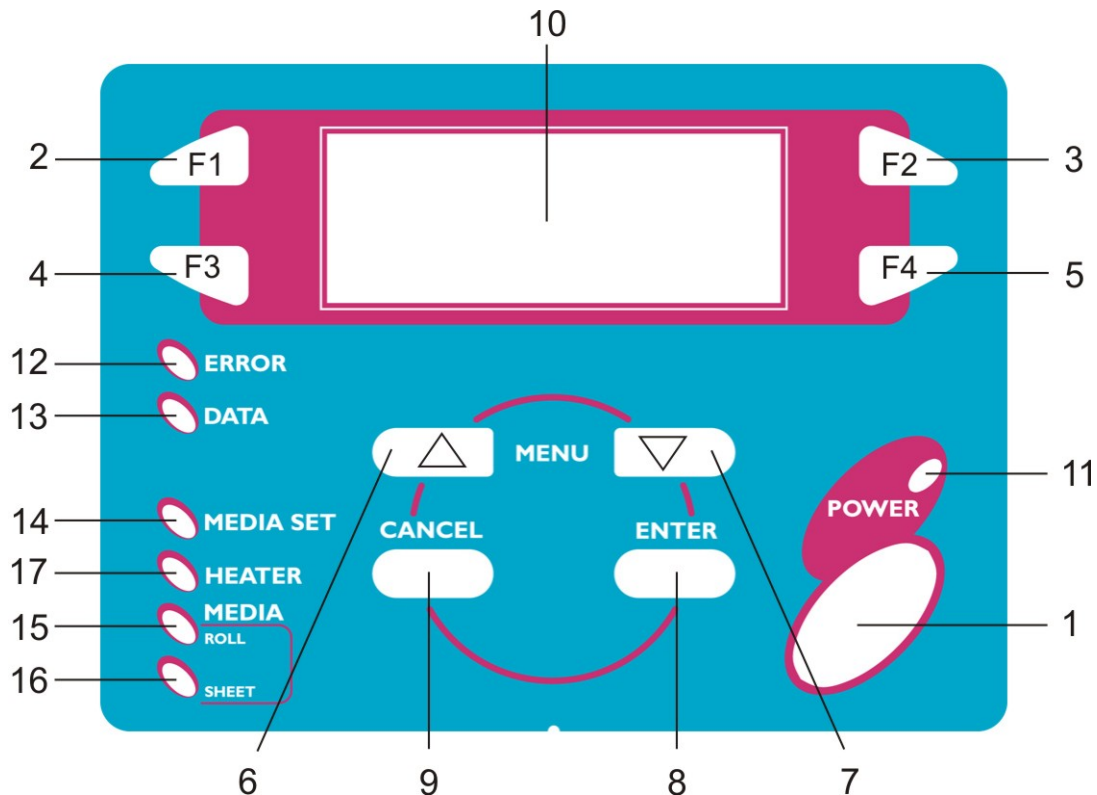
There have been a number of requests from the field, asking the heaters to be on by default for a few user settings. This has now been implemented as follows:

- For user 1 and user 8 default settings are as follows:
  - Pre heater A: 50°C
  - Fixer B: 40°C
  - Post Fixer C: 50°C
  - Dryer D: 50°C
- For users 2 → 7, by default the heaters are still OFF.

### **⚠ Notes ⚠**

Please note some RIP software do not allow selection of the user from software side. In some cases, however, they do automatically activate user 8.

## 2.1.4 Operation panel



### 2.1.4.1 Keys

No	Name	Normal	Setup menu display
1	[POWER] key	Switch the printer ON and OFF	Switch the printer ON and OFF
2	[F1] key	Executes the function assigned to F1.	Executes the function assigned to F1.
3	[F2] key	Executes the function assigned to F2.	Executes the function assigned to F2.
4	[F3] key	Executes the function assigned to F3.	Executes the function assigned to F3.
5	[F4] key	Executes the function assigned to F4.	Executes the function assigned to F4.
6	[MENU ↑] key	Changes the LCD monitor display to the setup menu status.	Changes the menu in reverse order.
7	[MENU ↓] key	Changes the LCD monitor display to setup menu status.	Changes the menu in forward order.
8	[ENTER] key	Displays the print mode currently set.	Determines the new parameter value and changes the LCD monitor display to the next menu. Sets the parameter value and changes the LCD monitor display to the next menu.
9	[CANCEL] key	-	Cancels the new parameter value and changes the LCD monitor display to the next menu. Clears the parameter value and changes the LCD monitor display to the next menu.



#### 2.1.4.2 LCD and LED's

No	Name	Colour	Status	Function
10	LCD monitor	-	-	The monitor displays the operation status and error messages of the printer.
11	POWER lamp	Green	ON OFF	The printer is on. The printer is off.
12	ERROR lamp	Red	Flashing OFF	An error has occurred. The contents will be displayed on the LCD monitor. Either there is no error or the power is off.
13	DATA lamp	Orange	ON Flashing OFF	The printer is receiving print data. The printer is analyzing received data. The printer is waiting to receive print data.
14	MEDIA SET lamp	Orange	ON OFF	The pressure roller is in the release position. Media has not been loaded. The pressure roller is in the secured position. The media has not been loaded.
15	ROLL lamp	Orange	ON OFF	The media type is set to roll media. The media type is set to sheet media.
16	SHEET lamp	Orange	ON OFF	The media type is set to sheet media. The media type is set to roll media.
17	HEATER lamp	Orange	ON Flashing OFF	The temperature of the heating elements is the requested temperature. The real temperature is the same as the requested temperature. The heating elements are warming up. The real temperature is different as the requested temperature. The heating elements are powered OFF.

## 2.2 IN-THE-BOX CONTENTS

After unpacking the packaging box, inspect if the unit is not damaged and that all necessary parts are present.

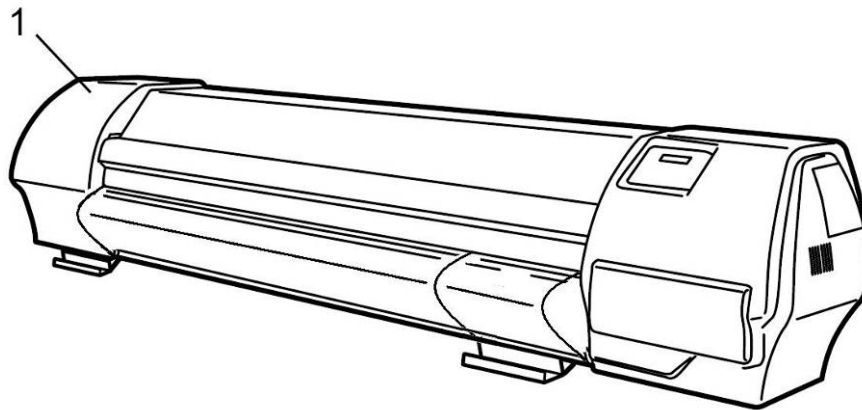
### ⚠ Notes ⚠

The contents of the packages may be different depending on the market where they are used. Contact your local MUTOH dealer or distributor for details.

If any part is missing or broken, contact either of the following:

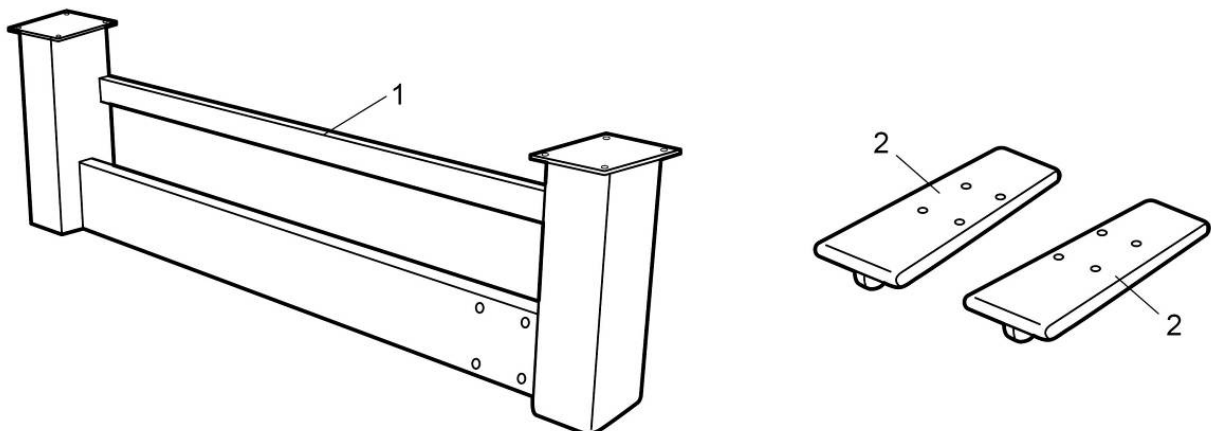
- The shop where you bought your MUTOH printer.
- Your local MUTOH distributor

### 2.2.1 Main unit packaging box



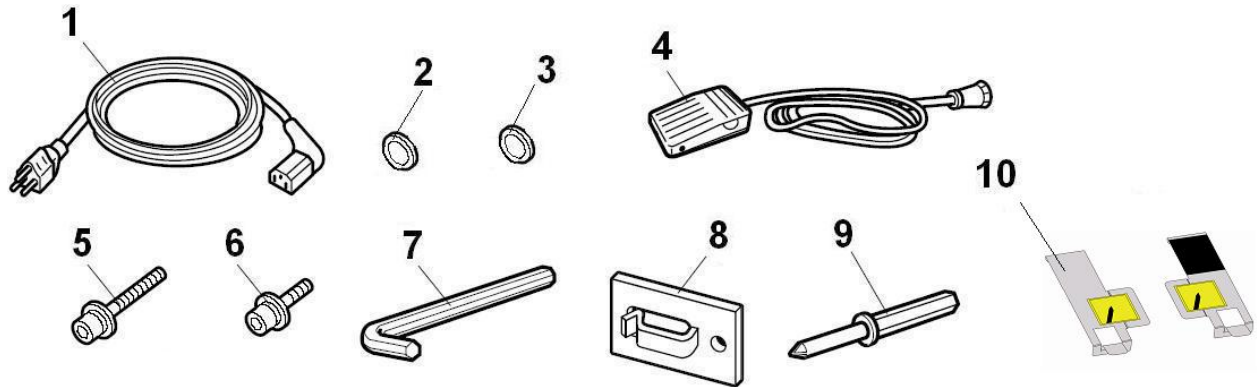
No	Description	Qty
1	Main unit	1
2	Waste bottle (not on image)	1
3	Accessory box (not on image)	1

### 2.2.2 Stand packaging box



No	Description	Qty
1	Stay	1
2	Foot	2

### 2.2.3 Accessories box



No	Description	Qty
1	Power cable	1
2	Plain washers M6	16
3	Spring washers M6	16
4	Foot switch	1
5	Hexagon socket head cap screw (M6 x 30)	8
6	Hexagon socket head cap screw (M6 x 16)	8
7	Assembly tool (hex. 5 mm)	1
8	Cable clamp	3
9	Screw driver	1
10	Media Retainer Set (2 pieces)	1

#### **⚠ Notes ⚠**

There are also two media sample rolls enclosed in the box of the printer, which can be used for the first nozzle check and for the first prints.

## 2.2.4 Machine Starters Kit



1



2



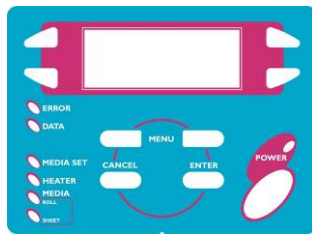
3



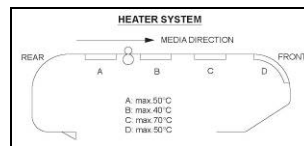
4



5



6



7



8



9



10



11



12



13



14



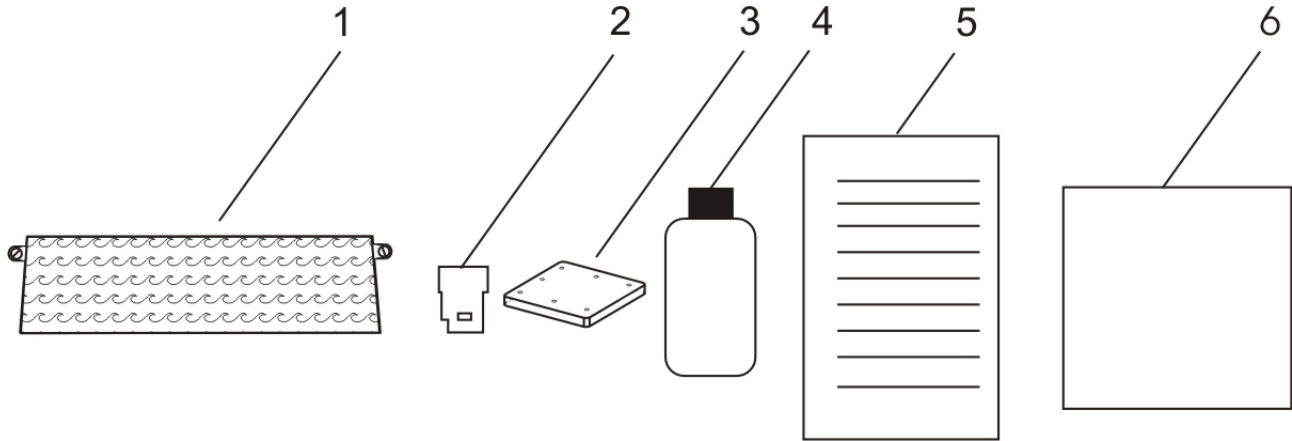
15

No	Description	Qty
1	User's Guide Spitfire Extreme	1
2	Quick installation Guide + CD	1
3	Instruction sheet machine starter kit	1
4	Getting Started with Mutoh's 1-in-ALL	1
5	Spitfire Extreme logo	1
6	Keyboard label	1
7	Heater label	1
8	Harmful label	1
9	Maintenance label set (6 languages)	1
10	Power Cable	2
11	Mutoh knife	1
12	Spitfire Setup Cleaning	8
13	Spitfire Mild Solvent Cleaning	8
14	Ink Starter Set (1x6 or 2x4)	8
15	User maintenance kit 6 months	1

## 2.2.5 User Maintenance kit

Order number: KY-80229

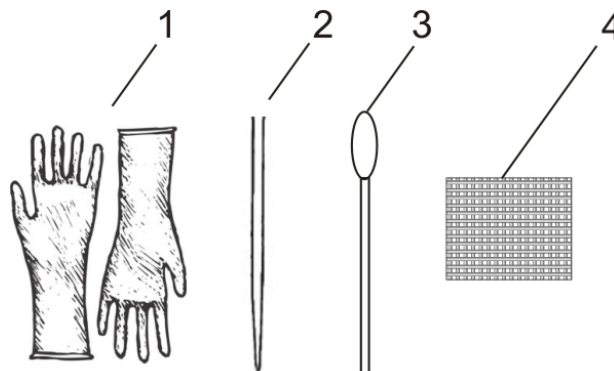
Kit content:



No	Description	Quantity
1	Sponge plate	6
2	Wipers	24
3	Spitting box sponge	12
4	Cleaning Liquid 250 ml	3
5	Instruction sheet	1
6	Good shape kit <b>KY-80228*</b>	1

\* Good shape kit order number: KY-80228

\* Good shape kit content:



No	Description	Quantity
1	Gloves	300
2	Pipette	60
3	Swabs	150
4	Polyknit wiper	300

## 2.3 INSTALLATION REQUIREMENTS

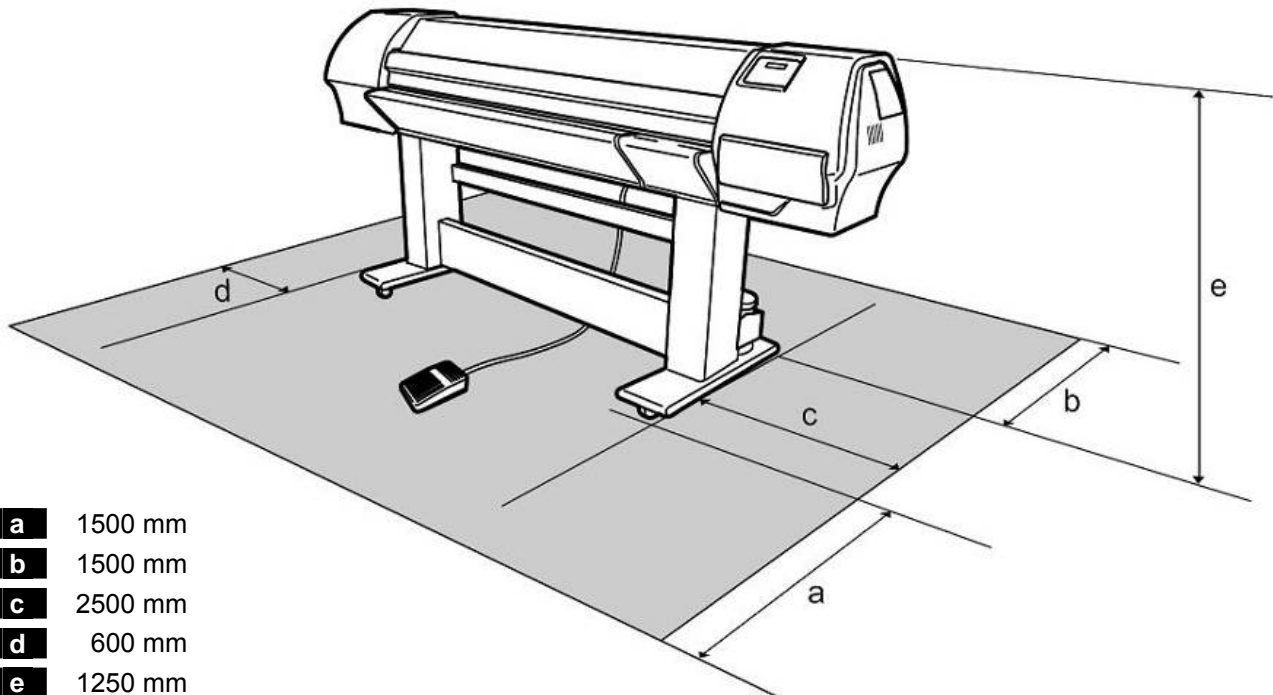
An Authorized Mutoh technician will install your unit and will make the printer ready for its first job. A room which meets the environmental and space conditions should be foreseen by the user.

Area	12.7m <sup>2</sup> (144ft <sup>2</sup> ) or larger. Frontage of 4.7m (15.7ft) or greater.	
Floor loading capability	2940 Pa (300kg/m <sup>2</sup> ) or over	
Electrical	Voltage	AC 100-120V AC 220-240V
	Frequency	60/50Hz±1Hz
	Capacity	AC100V-120V : 12A AC220V-240V : 6A

In order to protect the printer for over currents, short circuits and earth faults, the building installation should be equipped with an automatic breaker double pole of 20 A and an earth leakage switch of 300 mA.

Environmental	Recommended working environment	Temperature: 23°C Humidity: 55%, without condensation
	Operational conditions	Temperature: 18°C-28°C Humidity: 40% to 80%, without condensation
	Rate of change	Temperature: No more than 2°C per hour Humidity: No more than 5% per hour
	Storage environment	Temperature: 4°C to 50°C Humidity: 40 to 80%, without condensation (When ink has been discharged.)

Install the product on a flat surface that fulfils the following conditions.



- a** 1500 mm
- b** 1500 mm
- c** 2500 mm
- d** 600 mm
- e** 1250 mm

## 3 BASICS

### 3.1 SWITCHING THE POWER ON/OFF

#### 3.1.1 Turning the power ON

Turn the power of the unit ON according to following procedure.

- Step 1 :** Press the [POWER] key of the operation panel, to turn the unit ON.  
➤ The POWER lamp of the operation panel will light (green).
- Step 2 :** The unit will start initial start-up operations.
- Step 3 :** After finishing initial start-up operations, the unit will enter the normal operating condition.



#### 3.1.2 Turning the power OFF

Turn the power of the unit OFF according to the following procedure.

- Step 1 :** Verify the following regarding the operational condition of the unit.  
➤ There is no printing operation being performed.  
➤ The operation panel is in a normal status.
- Step 2 :** Press the [POWER] key of the operation panel to turn the unit OFF.
- Step 3 :** Following message is displayed for 3 seconds on the operation panel.



- Step 4 :** The product will perform the power OFF operation.  
➤ Following message is displayed on the operation panel.



- All lamps and the LCD of the operation panel will turn OFF.
- The product will automatically turn the power OFF after performing a tubing flush.

## 3.2 LOADING MEDIA

### 3.2.1 Loading roll media

Please refer to the User's Guide of the Unwinder/Winder 100 or the T-winder to know how to load roll media.

### 3.2.2 Loading sheet media

You can use the following sheet media with your printer.

Machine	Media Width	Printing Width
Spitfire Extreme 65	1653 mm	1643 mm
Spitfire Extreme 90	2280 mm	2250 mm

To load sheet media, follow the steps below.

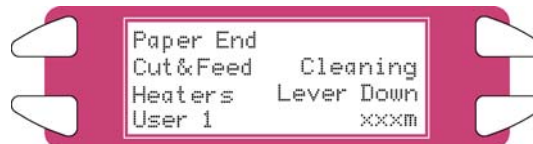
#### ⚠ Notes ⚠

If roll media is attached to the printer, wind the media up and then load the sheet media.

**Step 1 :** Turn the printer on.

**Step 2 :** The printer starts the initialize operation.

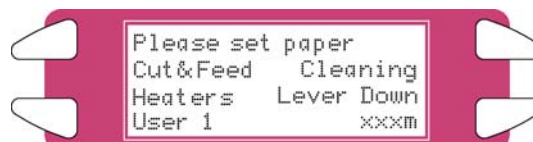
- The following message is displayed on the operation panel.



**Step 3 :** Verify if the sheet lamp on the operation panel is unlit.

**Step 4 :** Press the [F4] key on the operation panel to lower the pressure rollers.

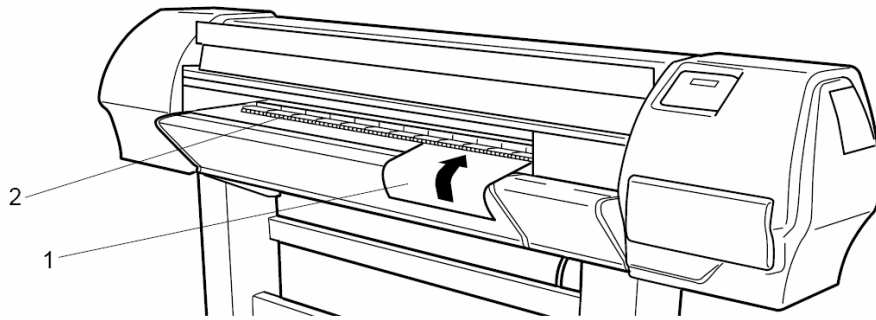
- The MEDIA SET lamp will light (orange).
- The following message is displayed on the operation panel.



**Step 5 :** Open the front cover.



**Step 6 :** Load the sheet media into the insertion slot at the front of the printer.

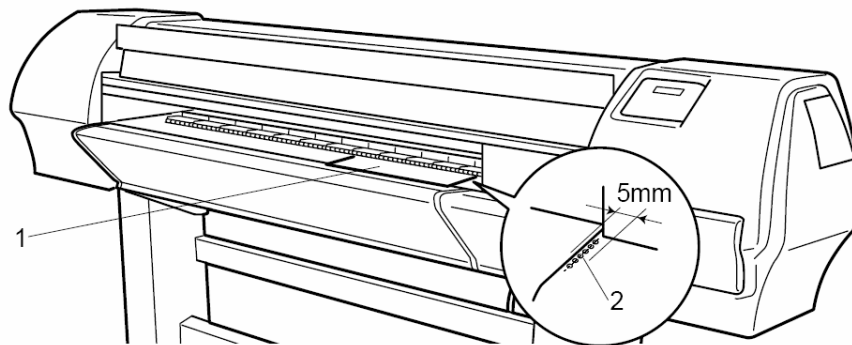


- 1 Sheet media
- 2 Insertion slot

**Step 7 :** Set the right edge of the media so that it is parallel with the media setting position.

**Notes**

- The media set position is a guideline for setting up the media.
- If the right edge of the sheet media is 5 mm or more from the media setting position, a media set error may occur if the media is not detected. Make sure to set the right edge of the sheet media within 5 mm of the media setting position.



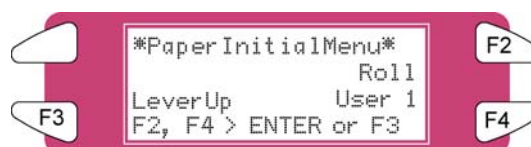
- 1 Sheet media
- 2 Media loading position

**Step 8 :** Press the [F4] key on the operation panel to lower the pressure rollers.

- The MEDIA SET lamp will turn off.

**Step 9 :** Close the front cover.

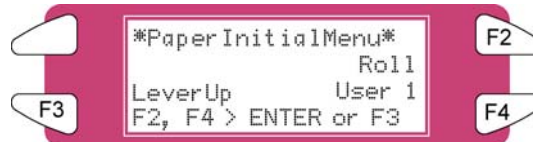
**Step 10 :** The media initial menu is displayed on the operation panel.



### 3.2.3 Setting media type

The procedure for setting media type is explained below.

- Step 1 :** Turn the printer on and load the media.
- Once the media has been set, the media initial menu will be displayed.
- Step 2 :** Press one of the following keys on the operation panel, and select the current media type.
- When alternating roll/sheet media selection: [F2]
  - When changing from media loading: [F3]
  - When changing media type: [F4]

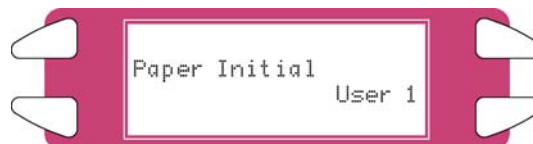


Setup items	Key	Parameters	Description
Media type	F2	Roll media Sheet media	Alternates the roll media type. • Roll media: Set when loading roll media. • Sheet media: Set when loading sheet media.
Lever Down/Up	F3	Lever up Lever down	Switches between up and down motion of the pressurizing lever. Use this when starting over from the media setup.
Media Type	F4	User 1 User 2 User 3 User 4 User 5 User 6 User 7 User 8	Set media type for printing. For setup values of printing operation, eight settings of "user 1-8" can be set. Refer to 'Menu Overview'

- Step 3 :** Press the [Enter] key on the operation panel.
- The media type has been set.
  - "Media Initial" is displayed on the LCD, and the printer starts the media initial operation.

#### ⚠ Notes ⚠

- The printer starts the media initial operation if you :
  - Press the [CANCEL] key on the operation panel
  - Leave the printer for 10 seconds without doing anything



- Step 4 :** When the media initial operation finishes, the printer moves to normal status.
- The setting media loading procedure has been completed.



## 3.3 REPLACING INK CASSETTES

### 3.3.1 Replacement time

Replace ink cassettes in the following situations:

a. The ink cassette is almost empty:

- The following message will be displayed:



- Printing operation will continue.
- Prepare new ink cassettes before they are totally empty.

b. The ink cassette is empty:

- The following message is displayed on the operation panel.



- Printing operation will stop.
- Replace with a new ink cassette as soon as possible.

#### ⚠ Notes ⚠

When the ink runs out or is low, the ink colour is indicated as follows:

- 1-8: The number of the ink cassette slot (Refer to 'Installing ink cassettes')
- All: All inks

### 3.3.2 Types

#### ⚠ Notes ⚠

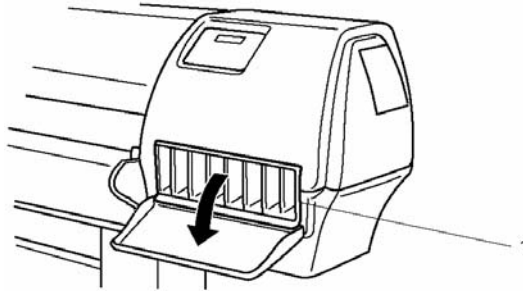
- The printer is designed for use with Spitfire Mild Solvent Ink cassettes. If you do not genuine products, printouts may become faint and the printer will not be able to detect the end of ink. The warranty will not cover (repairs will require a fee) a breakdown.
- Please refer to the pricing sheet for more info about the Spitfire Mild Solvent ink and cleaning.

### 3.3.3 Replacement procedure

Follow the steps below to replace ink cassettes.

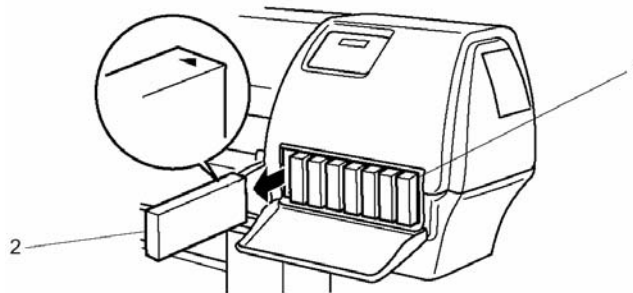
- Step 1 :** If the printer is turned on, make sure of the following
- Printing or other operations are not performed.
  - Make sure that the display on the operation panel shows the normal state.
  - The MEDIA SET light on the operation panel goes off.

**Step 2 :** Open the ink compartment cover.



1 Ink Compartment

**Step 3 :** Remove the ink cassette from the ink cassette slot.



1 Ink cassette slot  
2 Ink cassette

**Step 4 :** Take the new ink cassette from its package.

**Step 5 :** Install the ink cassette following the steps in "Installing ink cassettes".

**Step 6 :** Close the cover of the ink compartment.

**Step 7 :** Make sure that the display on the operation panel returns to normal status.

## 3.4 REPLACING THE CUTTING BLADE

### 3.4.1 Replacement time

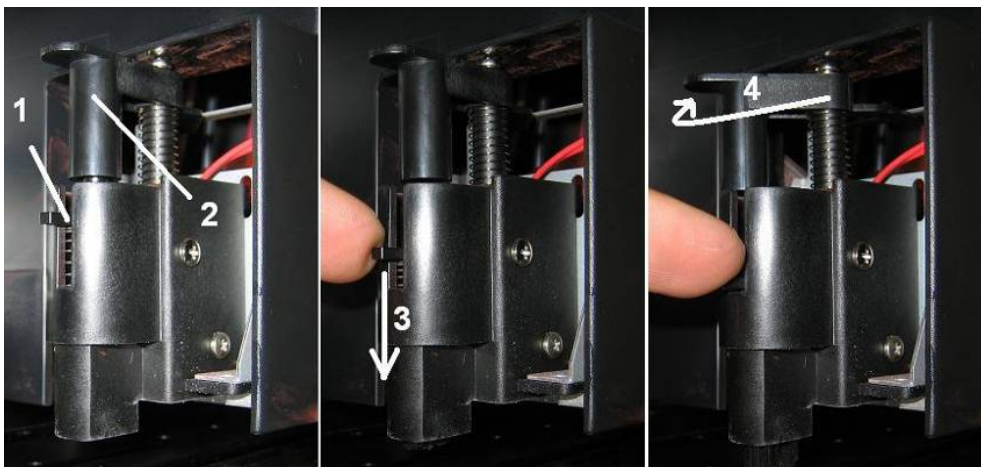
Replace the cutting blade under the following conditions.

- a. Media cannot be cut clearly
- b. When the cut edge has scuffing

### 3.4.2 Replacement procedure

Follow the steps below to replace the cutting blade.

- Step 1 :** If the printer is powered ON, make sure of the following:
- Printing or other operations are not performed.
  - Make sure that the display on the operation panel shows the normal status.
  - The MEDIA SET light on the operation panel goes off.
- Step 2 :** Go to the H.Unlock menu (SetupMenu 5/7) and unlock the head.
- Step 3 :** Open the front cover.
- Step 4 :** While pressing the cutting blade holder tab, rotate the cutting blade holder lever in the direction shown on the picture.
- Step 5 :** Take out the cutting blade.



- 1 Cutting blade holder tab
- 2 Cutting blade holder lever
- 3 Pull down tab
- 4 Rotate lever as shown

- Step 6 :** Insert the new cutter into the media cutting blade holder.
- Step 7 :** While slightly pressing the cutting blade holder tab, return the cutting blade lever to its original position.
- Step 8 :** Close the front cover.
- Step 9 :** Press the [ENTER] key on the operation panel.
- The carriage returns to its original position and returns to menu 6/7.
- Step 10 :** Cutting blade replacement has been finished.

## 3.5 REPLACING THE WASTE BOTTLE

### 3.5.1 Replacement Time

Replace the waste liquid tank when following message is displayed.



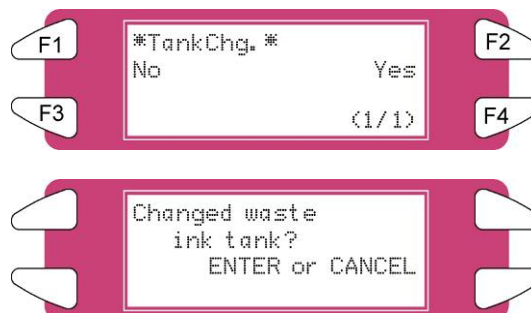
### 3.5.2 Replacement Procedures

Follow the steps below to replace the waste liquid tank.

**Step 1 :** Check the following if the power of the printer is ON.

- Printer is not printing.
- Operation panel is in its main screen.
- Media setting light on the operation panel is off.

**Step 2 :** Follow "Menu setup on the operation panel" and display the tank replacement menu on the operation panel.



**Step 3 :** Open the cap of the waste liquid tank.

**Step 4 :** Remove the waste liquid tank from the tank tray of the stand.

#### ⚠ Notes ⚠

Put the used waste liquid tank in a plastic bag and follow the local regulations when disposing.

**Step 5 :** Open the cap of a new waste liquid tank and put the tank to the printer.

**Step 6 :** Press the [ENTER] key on the operation panel.

**Step 7 :** The replacement of the waste liquid tank has been completed.

## 3.6 WORKING WITH MUTOH'S SMARTCHIP MANAGEMENT SYSTEM.

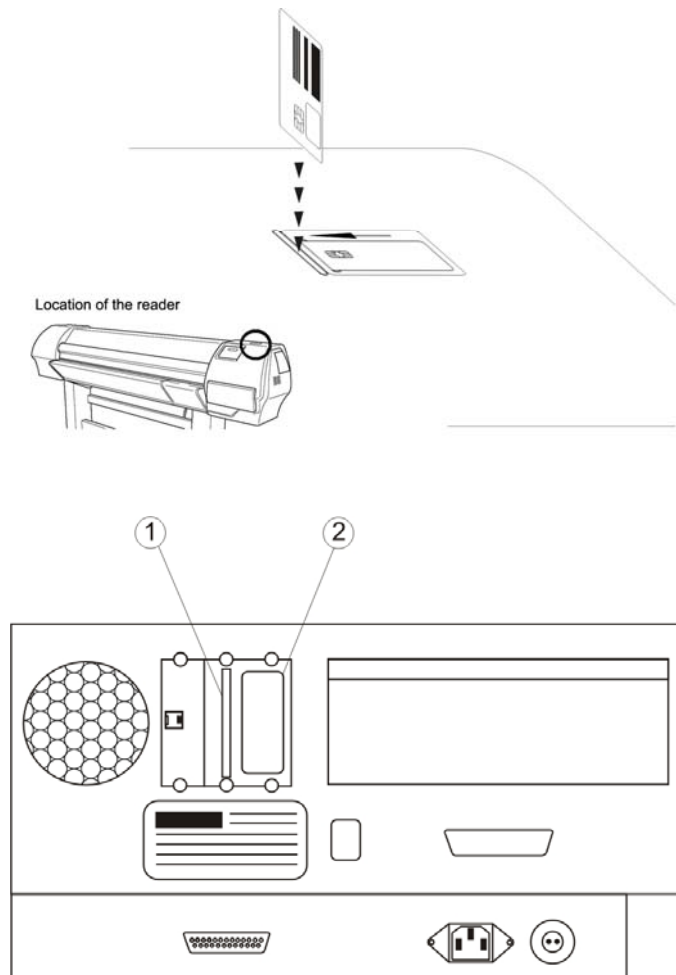
### 3.6.1 Introduction

To be able to print, ink volume has to be transferred to the printer. If not, the file will not be launched.

In case of using **ink cassettes**, the ink volume is written onto the smartchips which are stuck to the ink cassette. The ink volume will be automatically transferred to the printer when working in the correct mode.

In case of working with **Mutoh's Bulk Ink System**, no smartchips are attached to the bulk ink cartridges; therefore when ordering bulk ink bottles, smartchips will be foreseen. These contain the necessary ink volume for this particular bottle.

It is possible to transfer the ink volume from these smartchips to the printer via the smart chip management system (slot on top of the printer or at the rear, depending on the model). After the transfer, you will be able to print as long there is ink volume left.



#### **⚠ Important ⚠**

**Do not pull any SmartChip cards from ink cassettes to use them in the reader. The ink volume on the SmartChip cards of the cassettes can be transferred to the SmartChip management system by scanning them one by one. Please find in the next coming chapters more info.**

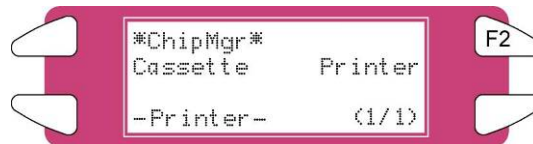
### 3.6.2 Selecting the correct modes

Depending on printing with ink cassettes or with a bulk ink system, the ink volume has to be transferred in a different way. You can choose between printer and cassette mode in the ChipManager menu:

Please follow the steps to switch between the two modes:

**Step 1 :** Power ON the unit.

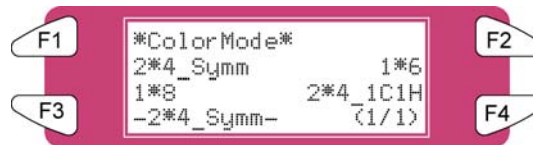
**Step 2 :** Go to InkManager → ChipMgr to choose between printer and cassette mode



**Step 3 :** When you have selected *cassette* mode, you are ready to print, no further settings should be made.

**Step 4 :** When you have selected *printer* mode, the colour mode should be set.

Go to SetupMenu 5/7 ► InkManager ► ColorMode



**Step 5 :** Choose between 2\*4\_Symm or 1\*6

Number of colours		Slot number of ink cassette							
		1	2	3	4	5	6	7	8
4	2x4 colours	Black	Yellow	Cyan	Magenta	Magenta	Cyan	Yellow	Black
6	1x6 colours	Black	Cyan	Transition Liquid	Transition Liquid	Yellow	Magenta	Light Cyan	Light Magenta

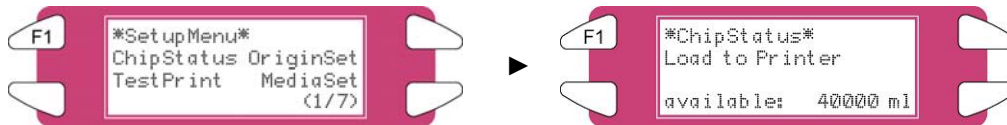


### 3.6.3 Transferring ink volume

#### Via the smart chip reader slot

Please follow the instructions below to transfer the ink volume on the SmartChips to the SmartChip Management System.

**Step 1 :** Browse to the ChipStatus menu and press the F1 key.



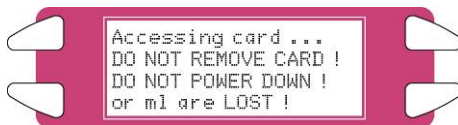
#### ⚠ Notes ⚠

Be sure to be in printer mode, otherwise “ChipStatus” will be replaced by “InkStatus”.

**Step 2 :** Insert the SmartChip in the reader slot and press the ENTER key.



**Step 3 :** The system will scan the reader slot.



**Step 4 :** Perform the correct action based on the displayed message.

IF...	THEN...
<p>a cleaning card is detected</p>	<p>Remove the SmartChip card and press ENTER</p>
<p>a valid card is found</p>	<p>Press ENTER to transfer the ink volume Press CANCEL to quit the operation</p>
<p>no valid card is found</p>	<p>Remove the SmartChip card. You will be asked if you want to scan the cartridge slots for ink volume. Please refer to the next chapter for all the details.</p>
<p>the total printer chip value exceeds 40 000 ml</p>	<p>The transfer has been cancelled automatically.</p>

**Step 5 :** Remove the SmartChip card after the transfer has been finished and press the ENTER key afterwards.



**Step 6 :** The printer returns to the ChipStatus menu.



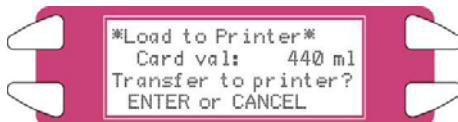
Via the Cassette slots of the printer.

When there is no or an invalid SmartChip card inserted, the management system will ask to scan all the cassette slots and transfer the rest ink volume from the SmartChip on the cassette to the management system.



**Step 1 :** Press the ENTER key to scan all slots.

**Step 2 :** If ink value is detected on one of the SmartChips, the following message will be displayed. Press the ENTER key to transfer or the CANCEL key to abort.



If there is no ink volume detected, the following message will be displayed



**Step 3 :** The management system will scan until it found a SmartChip with ink volume, repeat this procedure until no ink volume is found anymore.

## 3.7 TRANSFER AND TRANSPORTATION

This section explains transferring and transporting the printer.

### 3.7.1 Transferring the printer

Following are instructions for transferring the printer.

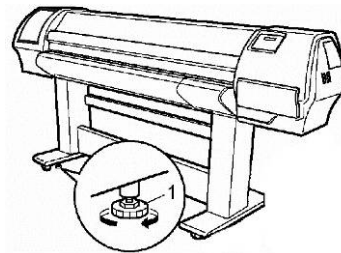
#### (1) Before the transfer

If you are using the stand, follow the steps below to transfer the printer.

- Step 1 :** Make sure the printer is turned off.
- Step 2 :** Make sure the head is in the right edge position (capping position).
- Step 3 :** Disconnect the power cable and all other cables.
- Step 4 :** The four adjusters are turned in the direction shown on the diagram.
- Step 5 :** Transfer the printer.

#### ⚠ Notes ⚠

The caster attached to the stand has been designed for transferring the printer during short distances.



- 1 Adjuster
- 2 Caster

#### (2) After the transfer

Follow the steps below to prepare the printer to be used after the transfer.

- Step 1 :** Make sure that you place the printer on an adequate place.
- Step 2 :** Connect the power cable and other cables.
- Step 3 :** Perform a nozzle check to check if the printer head has clogged.
- Step 4 :** Perform a fine adjustment of image quality.

### 3.7.2 Transporting the printer

When you transport the printer, the printer should be repacked in the original box and packing materials, to protect it from vibration or impact.

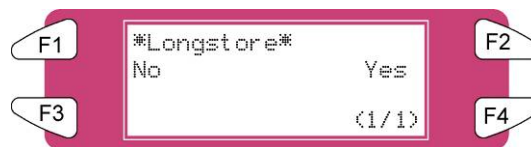
The printer should be in long store conditions.

## 3.8 LONGSTORE

When transporting your printer or leaving your printer unattended for five days or more, it is highly recommended to LongStore the printer in order not to damage the heads and/or complete ink system. This means that the complete ink channel system will be filled with Spitfire Mild Solvent cleaning liquid.

### 3.8.1 Procedure to LongStore

Go to the LongStore menu (SetupMenu 5/7 ► InkManager 2/2 ► LongStore ► F2)



The process consists of several cleaning loadings, several air loadings and one ink loading. On the display of the operation panel a time indication is mentioned on the fourth line.

Message	Time
1. Please remove cart.	29
2. Ink Discharge	
3. Please insert Cleaning cart.	
4. During washing wait for a while	
5. Ink not filled [ALL]	
6. Power OFF	

#### ⚠ Notes ⚠

When a cleaning cassettes is empty during LongStore procedure, remove the empty one and replace it by a new one. Only the last cycle will be repeated. Although, the full time (29 minutes) is mentioned again on the panel.

After powering OFF the machine, the tubings in the waste bottle should be mounted on the nipple plate at the bottom of the machine. This to prevent air is coming in the ink system which will dry out the heads.

### 3.8.2 Starting up after a LongStore

Message	Time
1. Power ON without Ink Cassettes installed.	9
2. Insert Cartridges	
3. Auto InkFill	

#### ⚠ Notes ⚠

When powering ON and the ink cassettes are already installed, the message "Not Original Ink" will be displayed. Remove 1 and reinsert it to continue the procedure.

# 4 PERIODICAL MAINTENANCE

## 4.1 DONE BY END USER

This section describes the periodical services required for this machine. The periodical services ensure stable printout quality of the machine. In the periodical services, some service parts may be checked, cleaned, or replaced.

Perform periodical inspections according to the table below.

N	Action	Frequency
1	Clean wipers	Daily maintenance
2	Flush caps in maintenance station	
3	Clean the edges of the caps in maintenance station	
4	Clean the area around the caps	Weekly maintenance
5	Clean around bottom of the heads	
6	Change the wipers	Monthly maintenance
7	Change upper sponge at back of the capping station	
8	Replacing the sponge in the spitting box	2 weekly maintenance

### Available kits for the end user and their order numbers

- User and good shape kit for 6 months KY-80229

No	Description	Quantity
1	Sponge plate	6
2	Wipers	24
3	Spitting box sponge	12
4	Cleaning Liquid 250 ml	3
5	Instruction sheet	1
6	Good shape kit	1

- Good shape kit KY-80228

No	Description	Quantity
1	Gloves	300
2	Pipette	60
3	Swabs	150
4	Polyknit wiper	300

- Long store kit KY-80230

No	Description	Quantity
1	Spitfire Mild Solvent Cleaning Liquid Ink kit	8
2	Black	2
	Cyan	2
	Magenta	2
	Yellow	2

- Solvent cleaning in a bottle T17S250CLN

### 4.1.1 Daily Maintenance

Before every print, perform a nozzle check. If some nozzles are missing or misfiring, perform cleaning cycles until all nozzles are in good shape.

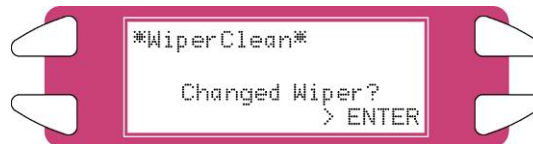
We advise to run a normal or a powerful cleaning cycle to recover the nozzles.

At the end of the day, when you will shut down the printer, the ink has to be removed from some parts, so it cannot harden. Otherwise, some parts will break down or result in bad print quality.

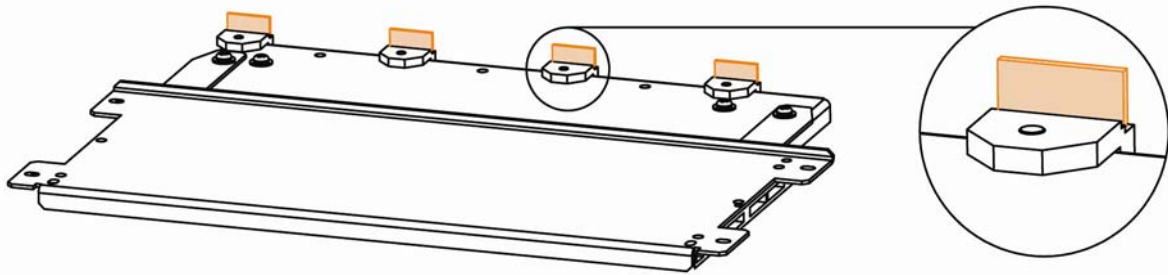
#### ⚠ Notes ⚠

In the box you will find a Good Shape Kit to perform the daily maintenance. Normally this is enough for 6 months. In case you're out of stock, you can order a new kit at Mutoh Order Entry Department. The product code of the good shape kit is *KY-80228*

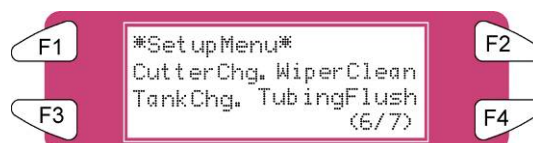
**Step 1 :** Power ON the printer and go to the "WiperClean-Menu". This will cause the unlocking of the carriage.



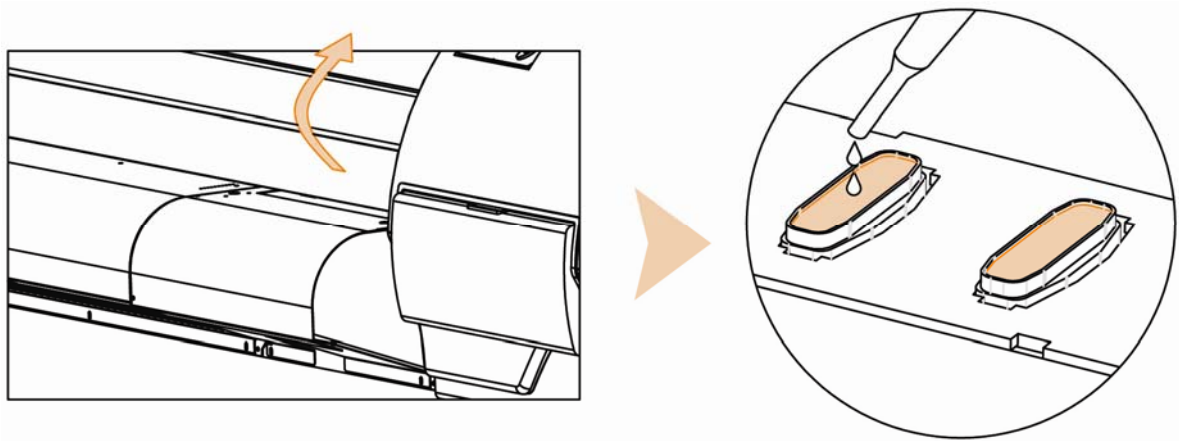
**Step 2 :** Clean the wipers with a polyknit wiper. Use some Spitfire Cleaning Liquid to remove drops of ink. Be sure to wear gloves.



**Step 3 :** Perform a tubing flush (F4 in Menu 6/7)

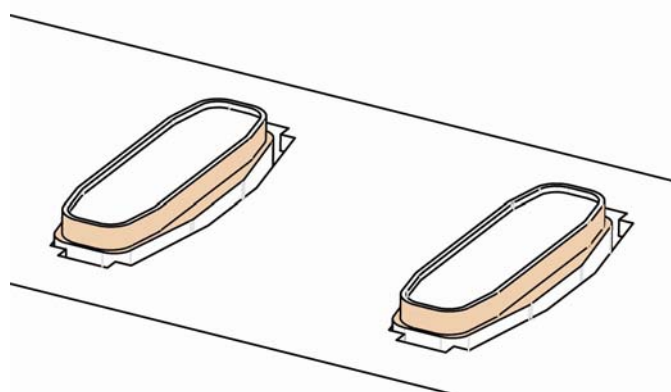


**Step 4 :** Open the front cover and flush the caps with Spitfire Cleaning Liquid until the mousses do not change from colour anymore.



**Step 5 :** To stop the tubing flush cycle press the ENTER key.

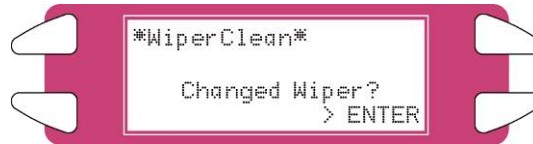
- I) Check if ink is spoiled on the edges of the caps. If so, clean the edges with the cleaning swab and if necessary use some Spitfire Cleaning Liquid. If not clean them every two days.



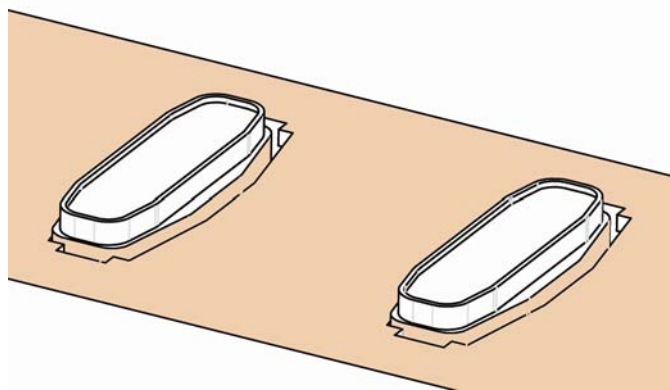
## 4.1.2 Weekly Maintenance

At the end of the week, ink has to be removed from some parts, so it cannot harden. Otherwise, some parts will break down or result in bad print quality. After performing a weekly maintenance, do not forget to perform the daily maintenance afterwards.

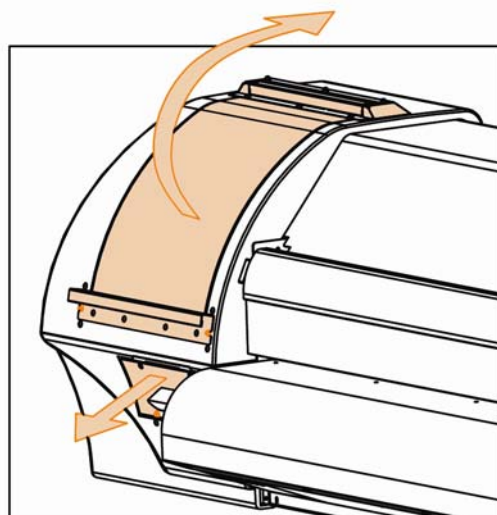
**Step 1 :** Power ON the printer and go to the “WiperClean-Menu”. This will cause the unlocking of the carriage.



**Step 2 :** Clean the area around the caps with a polyknit wiper. If you see ink, dust or some thing else, clean it immediately so it can not influence the print quality.



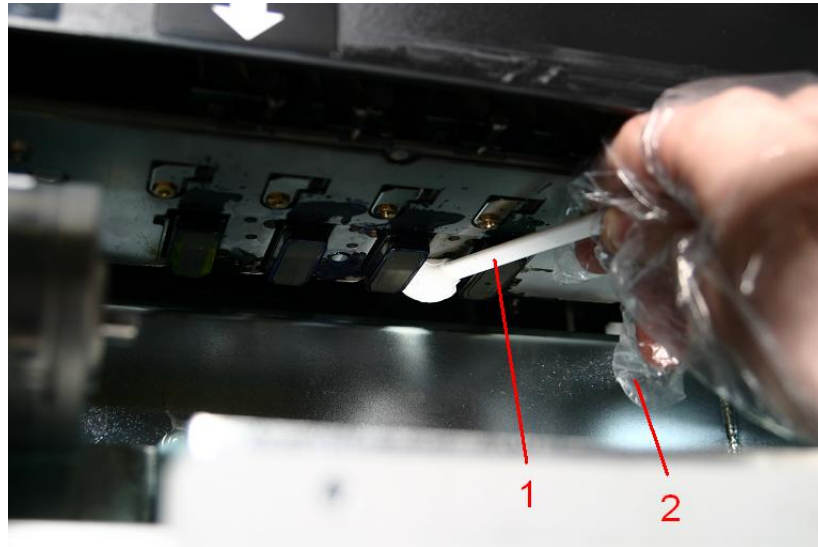
**Step 3 :** Open the left maintenance covers by loosening the four screws.



**Step 4 :** Slide the carriage into the left maintenance area.

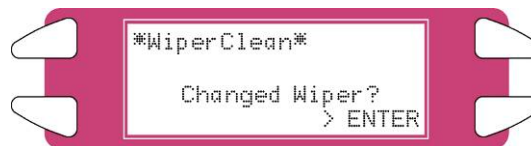


**Step 5 :** Clean the edges of the heads with a cleaning swab wetted by Spitfire Cleaning Liquid. Make sure you do not touch, clean the nozzle plate; this would lead to poorer print quality.



- 1 Cleaning Swabs
- 2 Gloves

**Step 6 :** Press the ENTER key when done. The carriage will automatically go to its home position.



**Step 7 :** Now perform the daily maintenance.

## 4.1.3 Monthly Maintenance

### 4.1.3.1 Replacing the wipers

**Step 1 :** Power ON the printer and go to the “WiperClean-Menu”. This will cause the unlocking of the carriage.



**Step 2 :** Slide the carriage to the left side of the machine.

**Step 3 :** Remove the old wipers with a pair of tweezers

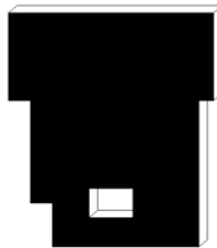
**Step 4 :** Before inserting a new wiper, moisten the wiper with Spitfire Cleaning Liquid.



**Step 5 :** Insert the moistened wiper with a pair of tweezers.

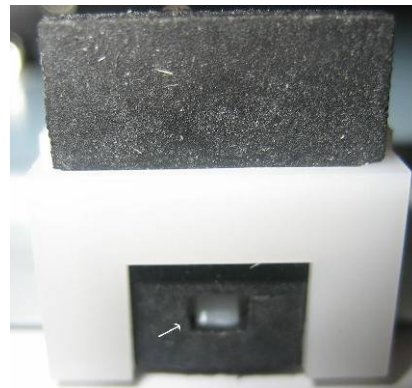


Be sure to insert the wiper correctly as shown below:



When standing in front of the machine.

Be sure that the wiper clicks in the wiper holder!



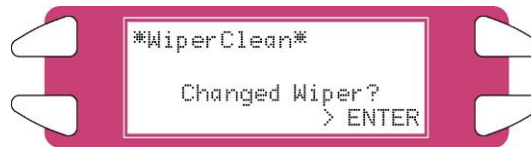
**Step 6 :** Close the front cover and press the [ENTER] key. The head will cap in.

#### ⚠ Notes ⚠

- Be careful not to break the lips of the wiper arm while installing the wipers.
- Do not touch the wipers with your bare hands to avoid fat or dirt get in contact with the wipers and automatically the nozzle plate. Use a pair of tweezers to avoid this. Clean wipers with appropriate cleaning liquid in case of dirt.

#### 4.1.3.2 Change upper sponge at back of the capping station.

**Step 1 :** Power ON the printer and go to the “WiperClean-Menu”. This will cause the unlocking of the carriage.

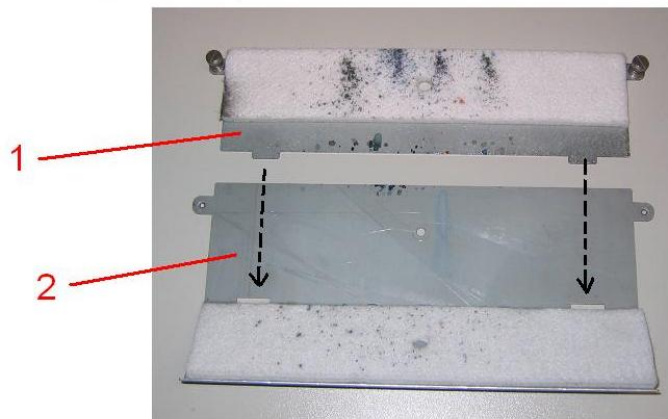


**Step 2 :** Remove the two screws fixing the sponge.



1 Screws to remove the capping sponge from the plate

**Step 3 :** Replace the sponge and tighten it again to the plate with the two screws.



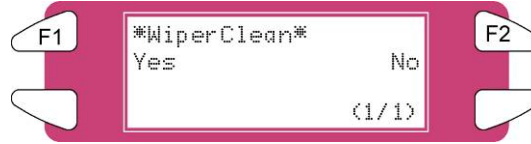
1 Capping sponge  
2 Plate

#### 4.1.3.3 Replacing the sponge in the spitting box.

##### ⚠ Notes ⚠

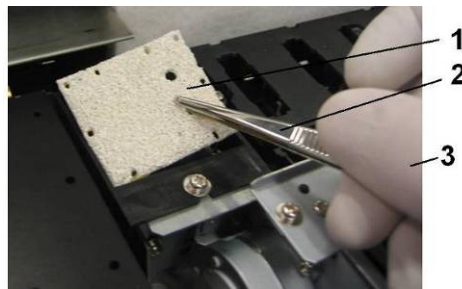
Use gloves and tweezers to change the absorbent in the flushing box.

**Step 1 :** Unlock the head



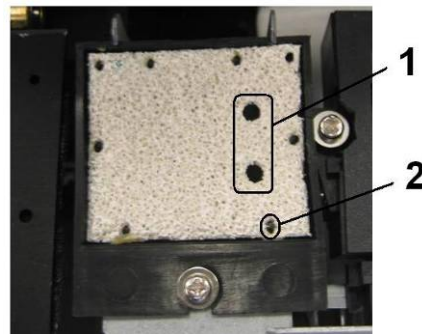
**Step 2 :** The carriage moves to the waiting position for replacing the flushing sponge.

**Step 3 :** Remove the old absorbents with tweezers.



- |   |                   |
|---|-------------------|
| 1 | Sponge (KY-42889) |
| 2 | Tweezers          |
| 3 | Gloves            |

**Step 4 :** Install the new absorbents in the flushing box. Make sure that the 2 holes are on the right side of the flushing box and that the pins of the black box are in the holes of the absorbent.



- |   |                  |
|---|------------------|
| 1 | Two holes        |
| 2 | Pin of black box |

**Step 5 :** Lock the head.

## 4.1.4 Cleaning

You need to clean the printer periodically to keep it in best working condition.

Following are instructions for cleaning the printer.

### 4.1.4.1 Cleaning the outer case

#### (1) Cleaning frequency

Clean once a month.

#### (2) Cleaning procedure

Remove dust or smudges on the outer case with a soft cloth.

### 4.1.4.2 Cleaning the inside of the printer

#### (1) Cleaning frequency

Clean once a month.

#### (2) Cleaning procedure

The following are instructions for cleaning the inside of the printer.

Follow the steps below.

**Step 1 :** Open the front cover.

**Step 2 :** Use a soft brush to carefully clean away any dust or dirt on the pressure rollers.



- 1 Pressure rollers
- 2 Platen

#### ⚠ Notes ⚠

Do not blow off media dust inside the printer using an air dusting machine. Doing so may cause noise to occur from inside the printer.

**Step 3 :** Use a cloth soaked in cleaning liquid and squeezes it well, wipe off media dust and ink from the platen.

#### 4.1.4.3 Head cleaning

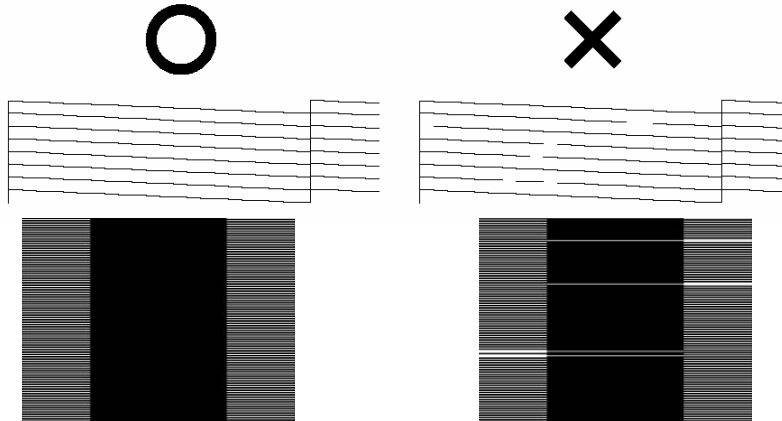
If printouts become faint or partially missed, perform head cleaning to clean the surface of the head and the nozzles.

Follow the steps below to perform head cleaning.

**Step 1 :** Make sure that the state of the product is normal.

**Step 2 :** Refer to "TestPrinting" to perform nozzle check printing.

**Step 3 :** Check if the print head, referring to the diagram below.

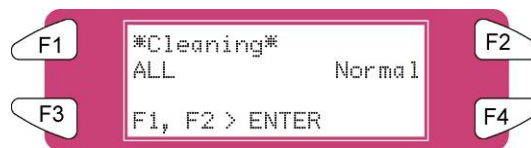


**Step 4 :** Check the printer is in the main screen.



**Step 5 :** Press the [F2] key on the operation panel.

I) The printer enters the cleaning menu.



**Step 6 :** Press the [F2] key on the operation panel to change the parameters.

Key	Parameter	Description
F2	Small	Small cleaning is performed.
	Normal	Normal cleaning is performed.
	Strong	Strong cleaning is performed.

**Step 7 :** Press the [ENTER] key on the operation panel to start the head cleaning.

**Step 8 :** When the head cleaning has been completed, the printer returns to the main screen.

**Step 9 :** Perform a nozzle check again and check the print head.

## 4.2 DONE BY AUTHORISED MUTOH TECHNICIAN

An Authorized Mutoh technician should check and replace some components of your printer on frequent base (every 6 and 12 months).

Be sure to remind your distributor when the replacements should be done.

It is very important not to skip a maintenance intervention in order to maintain constant print quality and to keep your warranty.

Please refer to the table below to know what the Authorized Mutoh technician should do.

N°	Action
10	Change dampers
11	Change pumps (*)
12	Change tubes from pumps -> Waste bottle
13	Change spitting box + tube + L connection
14	Change capping station
15	Change cap assembly maintenance station
16	Apply grease on head up-down cams when needed
17	Apply grease on Y-motor belt when needed
18	Apply grease on roller path – carriage when needed (**)
19	Apply grease on capping station cam + gears when needed
20	Dust removal in fan area underneath print platform

Maintenance Cycle	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
10						X						X
11						X						X
12						X						X
13						X						X
14												X
15						X						
16						X						X
17						X						X
18						X						X
19						X						X
20						X						X

### ⚠ Notes ⚠

- All cleaning in “Ink areas” must be done with Spitfire Mild Solvent cleaning.
- Above maintenance cycle is based on use:  
8 hours / day, 5 days / week and 44 weeks / year.  
If machine is used more, maintenance periods will come earlier.

Available kits for Authorized Mutoh Technicians only and their part numbers:

**maintenance cycle Kit 6 months** **KY-80226**

**maintenance cycle kit 12 months** **KY-80227**





# 5 PREPARATIONS BEFORE PRINTING

## 5.1 USING MEDIA

This section describes details on available media for the printer.

### 5.1.1 Media range

Please refer to Mutoh's website ([www.mutoh.be](http://www.mutoh.be)) for the media compatibility lists and much more information on using, handling media.

### Media Range



As one of the world's largest manufacturers of wide-format piezo inkjet printers, Mutoh Europe is committed to deliver total solutions : machine, RIP software, inks and media with matching profiles, i.e. anything you need to start production of top quality outputs in no time.

### 5.1.2 Cautions on handling media

When you handle media, please pay attention to the following.

- Use recommended media in an appropriate environment. Following are the appropriate temperature and humidity ranges for printing.

	Temperature	Humidity
Recommended working environment	23°C	40% to 70%
Rate of change	Within 2°C per hour	Within 5% per hour

- Do not use creased, damaged, torn, curled, or wrapped media.
- The size of the recommended sheets can change at a fixed ratio according to the temperature changes of the working environment. Before using sheet media, place the sheet in the working environment for at least 30 minutes, to have it match to the temperature of the working area.
- Printing before the media could accommodate to the printing environment may cause media jams due to slippage or creases. This also adversely affects the quality of printing.
- Media has a printable side and a non-printable side. If you print on a not printable side, blurring or slight touching may occur.
- Do not touch the printable side of media. Moisture or oil from hands affects the printing quality.
- Do not leave the printer for a long time with media loaded. The media may curl resulting in misalignment, media jams, or decreased printing quality. In particular, avoid this in winter, dry seasons, or during final printing.
- Do not lose the box or wrapping bag for storing media.

### 5.1.3 Precaution on storing media

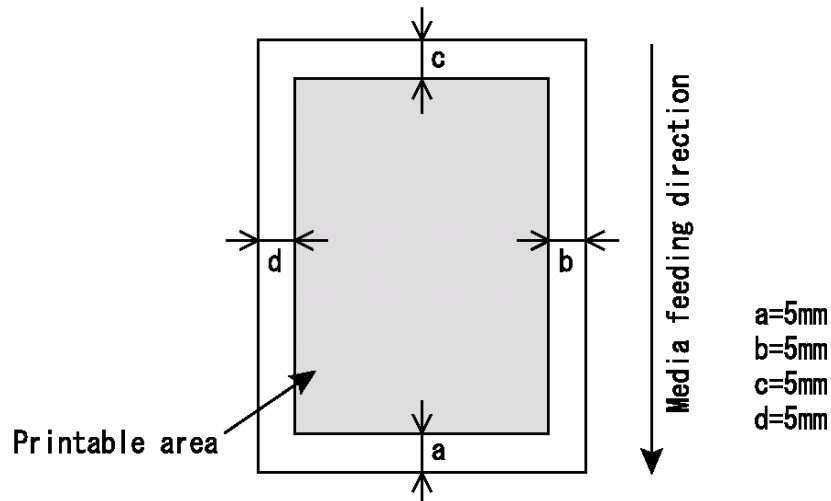
When storing media, pay attention to the following.

- Do not store media in high temperature, high humidity, or direct sunlight.
- Store sheet media in the original bag after unpacking.
- Unused roll media must be removed from the scroller, rewound tightly, and stored in the original wrapping bag and the box.
- Do not wet media.

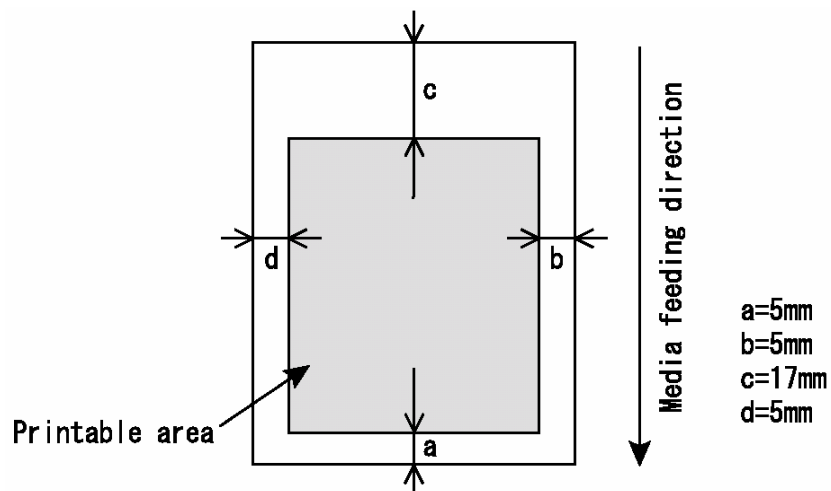
### 5.1.4 The printing area

The printing area is shown below.

#### (1) Roll media



#### (2) Sheet media



## 5.2 SET THE CORRECT DISTANCE ADJUST (STEP)

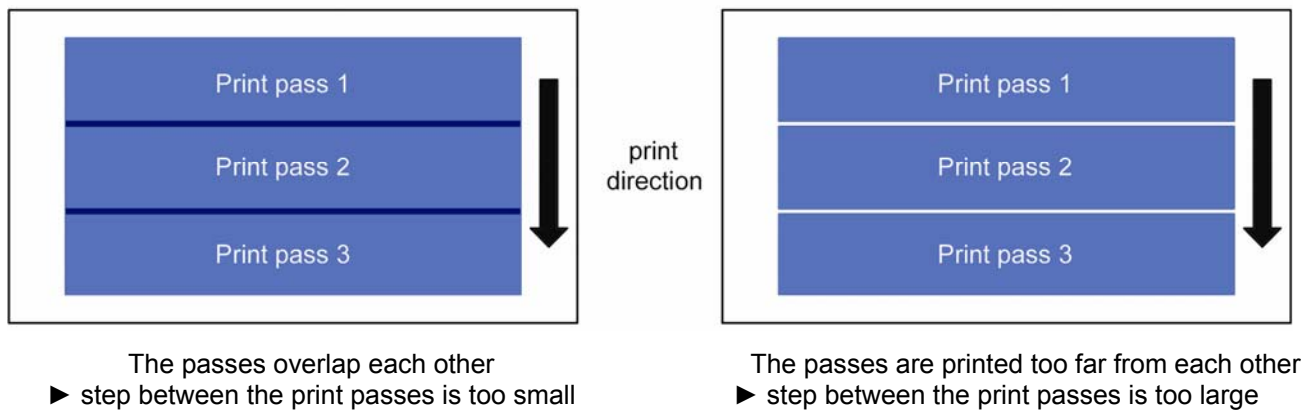
Obtaining constant printing quality on a wide-format Piezo inkjet printer is not only determined by the working environment, the RIP, the profiles, the inks and the media which are used. One of the key factors for obtaining constant output quality is the correct distance adjustment, also called “step”, on your Mutoh inkjet printer.

### 5.2.1 Basics about the step

Every image is printed in several print passes. After every pass, the media is fed an amount of millimetres. When the step is not set correctly, the passes will overlap each other or will not be printed precisely next to each other which results in white bands between two print passes.

Therefore a function, distance adjust (or step), is added to the menu to control this feed operation.

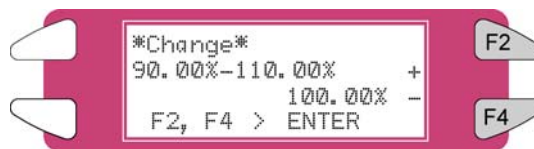
Refer to the table below for visual support



#### ⚠ Notes ⚠

It is recommended to start printing with a step of 100.00% and to adjust it afterwards. Once a step is set for a particular media it will not change on following conditions:

- The step is only applicable on the printer in question and not interchangeable.
- The media manufacturer does not change any specifications (especially backing) of the media.
- The standard take-up system is used in combination with the I<sup>2</sup> technology.
- The optional unwinder/winder 100 is used.



Please refer to the next chapter to know where and how to change the step.

## 5.2.2 How to change the step

### 1) Via the status screen

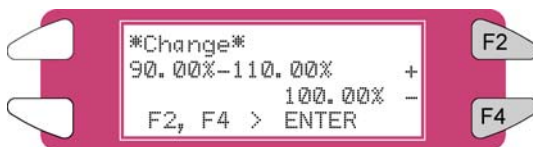
**Step 1 :** Press **F1** in the Ready to print screen



**Step 2 :** Press **F2**

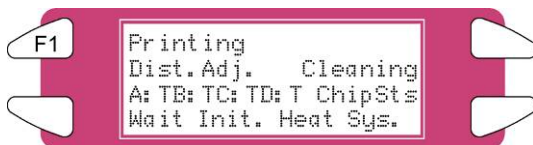


**Step 3 :** Press **F2** or **F4** to change the step

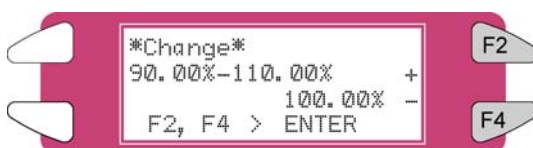


### 2) While printing

**Step 1 :** Press **F1** while printing.



**Step 2 :** Press **F2** or **F4** to change the step

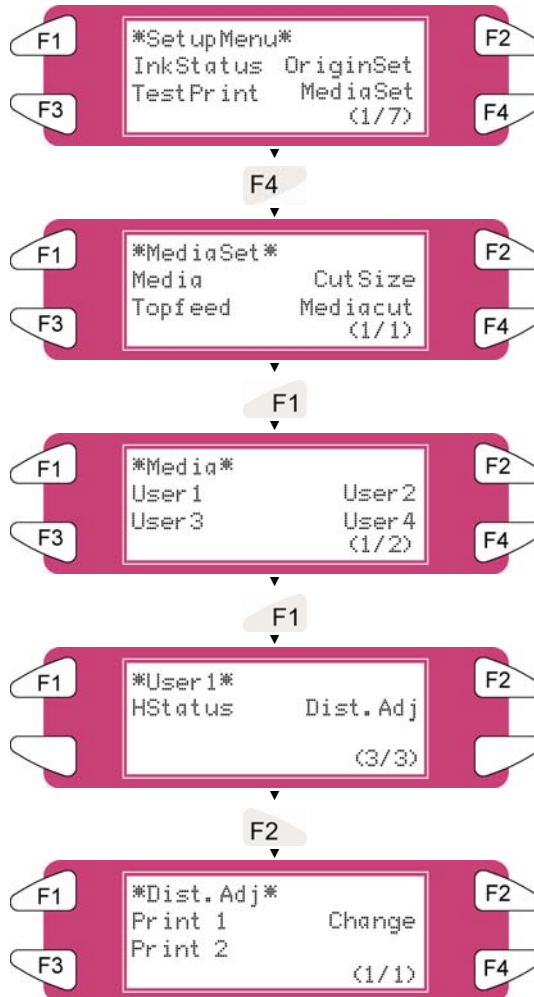


### 3) Via the printer interface

It is also possible to print a pattern via the firmware. But this is not that precisely as with the DVD.

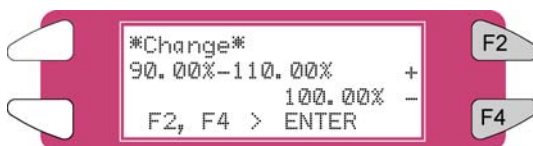
Please follow the steps below:

**Step 1 :** Go to the Dist. Adj. menu as follows.

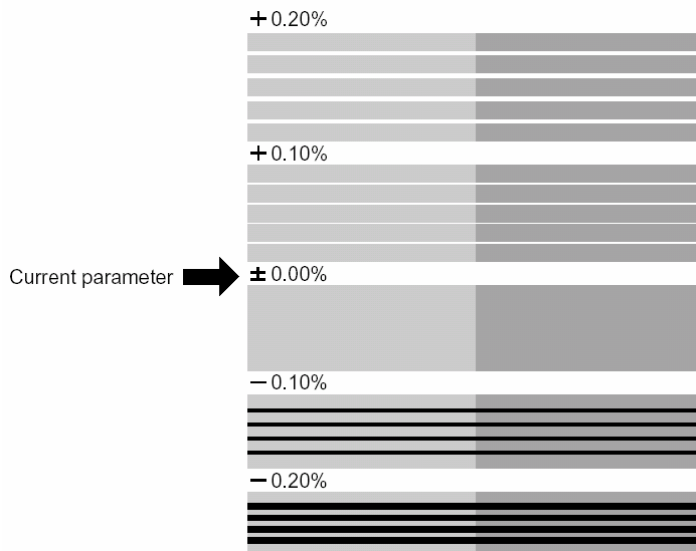


Setup items	Parameters	Description
Dist.Adj.	Print 1	Print the test file with intervals of $\pm 0.10\%$
	Change	Change the step (90.00 % - 110.00 %)
	Print 2	Print the test file with intervals of $\pm 0.20\%$
	-	[CANCEL] key: to shift to the previous hierarchy menu.

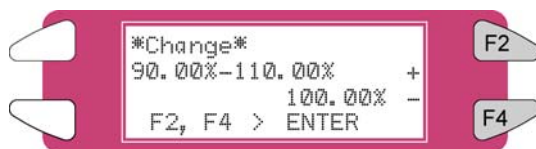
**Step 2 :** Set the step to 100.00%.



**Step 3 :** Print pattern 1 or 2.



**Step 4 :** Adjust the step with the **F2** or **F4** key



**Step 5 :** Reprint the patterns until step is set correctly.

### 5.2.3 Helpful tools for setting the step

The step can be set / changed in two different ways:

- Using the enclosed DVD
- Via the printer interface

Notice that your step will be set more precisely when using the files on the DVD instead of the ones embedded in the firmware.

#### 5.2.3.1 Using the DVD

**Step 1 :** Insert the “GET STARTED WITH...” DVD (auto start-up)



**Step 2 :** Follow the complete procedure described on the DVD until no overlap or gaps are visible in the pattern.

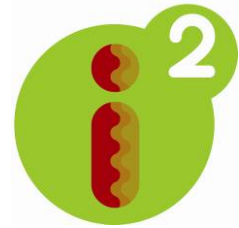


**Step 3 :** Afterwards print the pre-ripped print file on Mutoh's One-in-ALL vinyl for verification

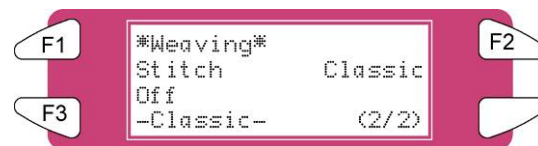


## 5.3 I<sup>2</sup> TECHNOLOGY

Without weaving ON, an image is completed (formed) by printing a series of complementary rectangular shaped stripes (bands, swaths, passes). Inherent to classic inkjet printing is that ink drying effects, stepping mismatch, miss firing nozzles show up in the printed image via ink bleeding and various types of banding. By switching ON one of the weave patterns you will give the traditional rectangular print swaths a wave-shaped look that will save you time and boost your output quality. Difficult images will print smoother, banding will be suppressed (neutralized) and you will have to spend less time fine-tuning your printer to create great looking output.



Moreover, when using wave-tuned profiles, you will be able to boost your printer's colour gamut as the i<sup>2</sup> (intelligent interweaving) technology allows depositing more ink, helping you to achieve higher colour densities.



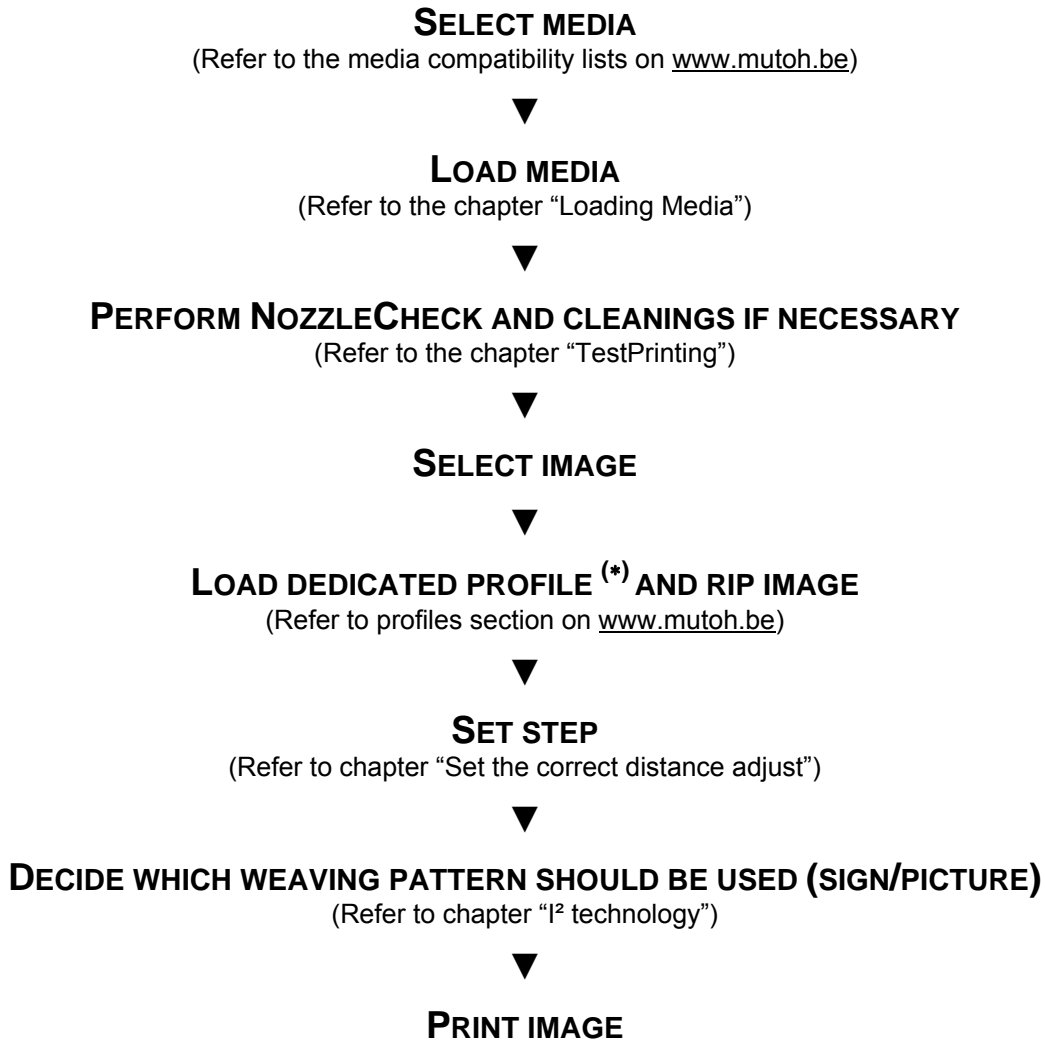
Setup items	Parameters	Description
Weaving (1/2)	Sign / Quality	Please refer to the table below to know what the different weaving forms are and which one to use.
	Picture / Speed	
Weaving (2/2)	Stitch	
	Classic	
	Off	
Weaving (1/2 – 2/2)	-	[CANCEL] key: To shift to the previous hierarchy menu.



Weaving method	User Tip	Print Modes Supported	2 pass	4 pass								
Sign / Quality	<p>Preferred setting for signage/poster applications containing big areas with solid colours or critical gradients and for photo quality output on coated media.</p> <p><i>(small loss of speed in 2 pass modes)</i></p>	<table><tr><td>720x720</td><td>2 pass</td></tr><tr><td></td><td>4 pass</td></tr><tr><td>540x720</td><td>2 pass</td></tr><tr><td></td><td>4 pass</td></tr></table> <p>Default selection after firmware installation</p>	720x720	2 pass		4 pass	540x720	2 pass		4 pass		
720x720	2 pass											
	4 pass											
540x720	2 pass											
	4 pass											
Picture / Speed	<p>Preferred setting for non-sign images, pictures, continuous tone data.</p> <p><i>(no speed loss)</i></p>	<table><tr><td>720x720</td><td>2 pass</td></tr><tr><td></td><td>4 pass</td></tr><tr><td>540x720</td><td>2 pass</td></tr><tr><td></td><td>4 pass</td></tr></table> <p>(*) 4-pass is a quality mode and will always use a tuned sign weave pattern, even if picture is selected from the panel / RIP.</p>	720x720	2 pass		4 pass	540x720	2 pass		4 pass		
720x720	2 pass											
	4 pass											
540x720	2 pass											
	4 pass											
Stitch	<p>Creates a fine print swath overlap. Mildly improves print quality versus "Off" setting.</p> <p><i>(lowest level of interweaving)</i></p>	<table><tr><td>720x720</td><td>2 pass</td></tr><tr><td></td><td>4 pass</td></tr><tr><td>540x720</td><td>2 pass</td></tr><tr><td></td><td>4 pass</td></tr></table> <p>(*) 4 pass data will be printed as classic</p>	720x720	2 pass		4 pass	540x720	2 pass		4 pass		
720x720	2 pass											
	4 pass											
540x720	2 pass											
	4 pass											
Classic	<p>Use classic to maintain classic printer behaviour in all print modes.</p> <p><i>(prior to firmware version 3.01)</i></p>	All print modes										
Off	<p>Switches off any kind of overlap/weaving. Useful when trying to inspect individual nozzle behaviour or checking the step-adjust.</p>	All print modes										

## 5.4 PRINTING FLOW

The following flowchart gives you a view on which steps should be taken to make a print. This is a very short summary of what should be done.



\* It is highly recommended to use one of the profiles Mutoh is making available on the website. A lot of parameters are included.

The most important ones are:

### Ink an colour management related

- Ink Restrictions
- Linearization
- Ink limits
- ICC Profile

### PrintMode related

- Resolution
- Amount of passes
- Unidirectional – Bi Directional
- Weaving ON – OFF

### Media related

- Heater settings
- Media thickness
- HeadHeight

The file name of each profile is build up in the same way

For example

4h\_mutoh\_oneinall\_540x720\_2p\_bi\_i2\_[2x4]

# heaters	made by	media	resolution	# passes	i² technology	colour config
					uni or bi	
					directional	

## 6 PRINTER MENU

### 6.1 HOW TO WORK IN THE MENU

Please find below all necessary information on how to switch, select and cancel menu items.

#### 6.1.1 Main screen

When powering ON the printer, it will (when no errors occur) start up in its main screen. The function of each key is explained below



No	Position	Description	Example
1	1st line	Displays the current status of the printer.	Ready to print
2	Left of 2nd line	Displays the function assigned to [F1] key	Cut&Feed
3	Right of 2nd line	Displays the function assigned to [F2] key	Cleaning
4	Left of 3rd line	Displays the function assigned to [F3] key	Heaters
5	Right of 3rd line	Displays the function assigned to [F4] key	Lever Up
6	Left of 4th line	Displays the currently set media type	User 1 – 8
7	Right of 4th line	Displays the approximate amount of remaining media in meter. However, the amount is displayed only when either "Roll media 1", "Roll media 2", or "Roll media 3" is selected in the Roll media setting menu.	30 m

#### 6.1.2 Menu screen

In the SetupMenu, changes can be made to the printer settings.  
The content displayed on the LCD monitor of the operation panel is as follows:





No	Position	Description	Example
1	1st line	Displays the setting menu name currently set.	SetupMenu
2	Left of 2nd line	Displays the function assigned to [F1] key.	InkStatus
3	Right of 2nd line	Displays the function assigned to [F2] key.	OriginSet
4	Left of 3rd line	Displays the function assigned to [F3] key.	TestPrint
5	Right of 3rd line	Displays the function assigned to [F4] key.	MediaSet
6	4th line	Displays the currently available functions of the [F1] key to the [F4] key or displays the page status if there are multiple pages for the currently displayed setting menu.	1/7

## 6.1.3 Changing between the screens

To change the printer status, follow the steps below.

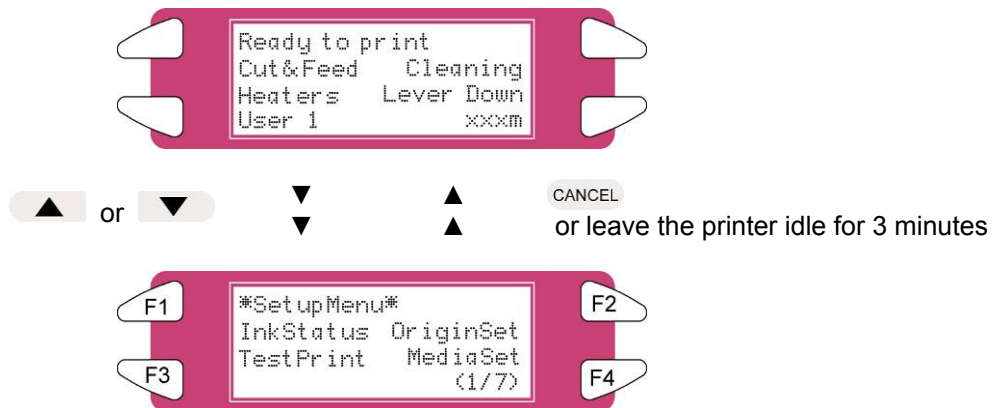
### 6.1.3.1 From main screen to menu screen

Press either  or  on the operation panel when the printer is in the main screen to go to menu screen 1/7 – 7/7

### 6.1.3.2 From menu screen to main screen

To switch from a menu screen to the main screen, following actions can be taken:

- Press the [CANCEL] key on the operation panel.
- Leave the printer for 3 minutes when the status is in the setting menu display.



## 6.2 OPERATION PANEL IN STANDBY MODE

This section describes functions operated on the operational panel when the printer is in the normal status.

### 6.2.1 [F1] – Feeding, Cutting media and Step Adjust

When you want to feed media forward or backward, follow the steps below:

- Step 1 :** Verify the following regarding the condition of the printer.
- I) It is not currently printing



- Step 2 :** Press the [F1] key of the operation panel.
- I) To shift to the Cut&Feed menu.



- Step 3 :** Press the [F3] key or the [F4] key on the operation panel.
- I) The product will perform following operations:

Setup items	Key name	Parameters	Description
Cut & Feed	F1	Cut	Cut media
	F2	Dist.Adj.	Set step
	F3	Forward	Feeds media forward.
	F4	Backward	Feeds media backward.

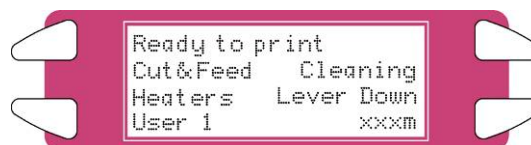
#### ⚠ Notes ⚠

If "Take-Up Roll" is set in the media detection setup menu, the product will not operate even if the [F4] key has been pressed.

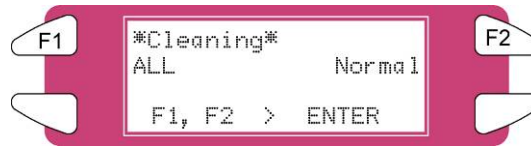
### 6.2.2 [F2] - Cleaning the heads

When there are some missing nozzles, a cleaning should be done. Depending on the quantity of missing nozzles and which head, a little, normal or powerful cleaning on head 1-2, head 3-4 or ALL could be done.

- Step 1 :** Verify the following regarding the condition of the printer.
- I) It is not currently printing



**Step 2 :** Press the [F2] key of the operation panel.  
I) To shift to the cleaning menu.



**Step 3 :** Press the [F1] key or the [F2] key on the operation panel.  
I) The product will perform following operations:

Setup items	Key name	Parameters	Description
Cut & Feed	F1	ALL, Head 1 – Head 2	Clean ALL heads or head couple one or two
	F2	Little, normal, powerful	Set the intensity of a cleaning

**Step 4 :** Press the [ENTER] key to start the requested cleaning.

### 6.2.3 [F3] - Controlling the heater elements

If you want to change or check the heater elements, follow the steps below.

**Step 1 :** Verify the following regarding the condition of the printer.  
I) It is not currently printing



**Step 2 :** Press the [F3] key of the operation panel.  
I) To shift to the heater menu.



The 'heater message' can be one of the following:

- Heater standby
- Heater warming up
- Heater ready



'A' stands for the heater.

'B' stands for the fixer.

'C' stands for the post fixer.

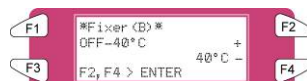
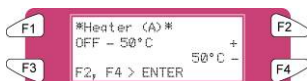
'D' stands for the dryer.

'S' stands for the Set-temperature (requested temperature).

'R' stands for the Real-temperature (actual temperature).

#### 6.2.3.1 Change the heater temperature

To change the temperature of one of the heaters, press the [F1-F4] key on the operation panel. The display will mention the following:



Press the [F2] key to decrease the temperature.

Press the [F4] key to increase the temperature.

Press the [ENTER] key to confirm the requested temperature change.

Press the [CANCEL] key to leave the menu without changing the heater settings.

### 6.2.3.2 Activate/ deactivate heaters.

In the second menu, press the [F1] key to activate or deactivate all heating elements.

In case the heating elements are activated, the display will mention "SET OFF". By pressing the [F4] key you can deactivate the heating elements. The display will mention "SET ON".

In case the heating elements are deactivated, the display will mention "SET ON". By pressing the [F4] key you can activate the heating elements. The display will mention "SET OFF".

Please note that after finishing a printing job (and no other print job is sent to the printer the heating elements will keep their temperature for approximately 6 minutes. After 6 minutes the heating elements are powered OFF.

### 6.2.4 [F4] - Operating the pressure rollers

When you want to switch the up and down movement of the pressure rollers follow the steps below.

**Step 1 :** Press the [F4] key on the operation panel.

I) The printer works as follows.



Status of the printer	Operation after the [F4] key has been pressed
The pressure rollers have been lowered The MEDIA SET lamp switches OFF.	The pressure rollers are lifted The MEDIA SET lamp will turn on (orange).
The pressure rollers have been raised. The MEDIA SET lamp switches ON (orange).	The pressure rollers are lowered. The MEDIA SET lamp will turn off.

#### ⚠ Notes ⚠

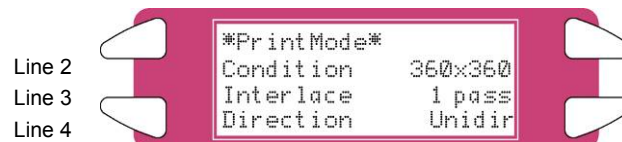
You can also switch the up and down movement of the pressure rollers using the foot switch instead of the operation panel.

### 6.2.5 [ENTER] - Print mode check

Use the following procedure to check the print mode currently set.

**Step 1 :** Press the [ENTER] key on the operation panel.

I) The following information is displayed on the operation panel for three seconds.



No.	Position	Description	Reference
1	Line 2	The printing quality is displayed.	Refer to 'Printing quality menu'
2	Line 3	The interlace method is displayed.	Refer to 'InterLace Setup menu'
3	Line 4	The printing direction is displayed.	Refer to 'Printing direction menu'

**Step 2 :** When the printing mode display closes, the product changes to its main screen.

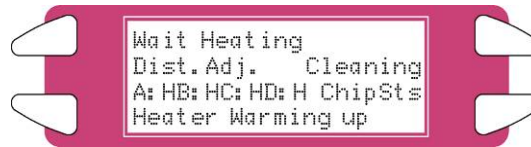


## 6.3 OPERATION PANEL DURING PRINTING

When sending a file to your printer, following messages can be displayed.

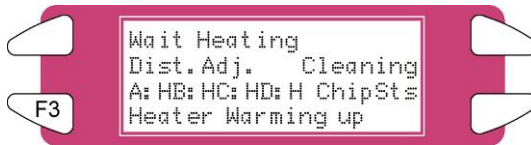
### 6.3.1 When heaters are not ready

When the heaters are not reached their target temperature, the following screen will be displayed.



Still, it is possible to start the print. However, the heater will continue to warm up in order to reach the requested temperature.

**Step 1 :** Press the F3 key to ENTER the HeaterStatus menu.



**Step 2 :** Go to submenu 2/2 and press the F2 key to start the print.

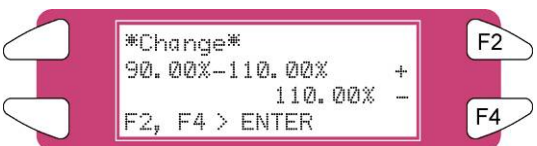
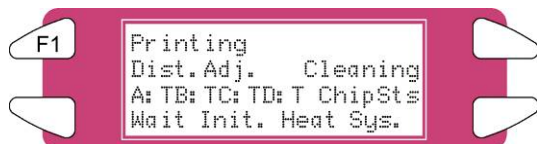


### 6.3.2 When heaters are ready

When heaters are ready, the printer will start printing.  
While printing, some actions can be taken.

#### 6.3.2.1 [F1] - On the fly step adjustments.

In case of overlapped printing images or white lines on printing image, the step should be adjusted.



(+) Increase in case of overlap

(-) Decrease in case of white lines between swats

#### ⚠ Notes ⚠

For more details about step adjustment, please refer to "Media Feed Compensation"



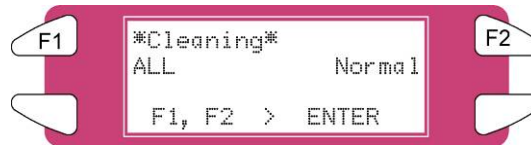
### 6.3.2.2 [F2] - Cleaning

While printing, it could be possible that some nozzles drop out, in that case, perform a little, normal or powerful cleaning.

Please follow the steps below to perform a cleaning.

When there are some missing nozzles, a cleaning should be done. Depending on the quantity of missing nozzles and which head, a little, normal or powerful cleaning on head 1-2, head 3-4 or ALL could be done.

- Step 1 :** Press the [F2] key of the operation panel.  
I) To shift to the cleaning menu.



- Step 2 :** Press the [F1] key or the [F2] key on the operation panel.  
I) The product will perform following operations:

Setup items	Key name	Parameters	Description
Cut & Feed	F1	ALL, Head 1 – Head 2	Clean ALL heads or head couple one or two
	F2	Little, normal, powerful	Set the intensity of a cleaning

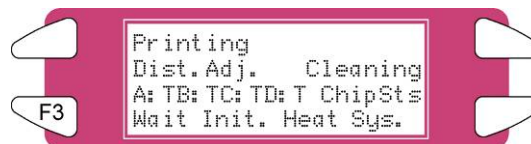
- Step 3 :** Press the [ENTER] key to start the requested cleaning.

### 6.3.2.3 [F3] - Adjust heaters

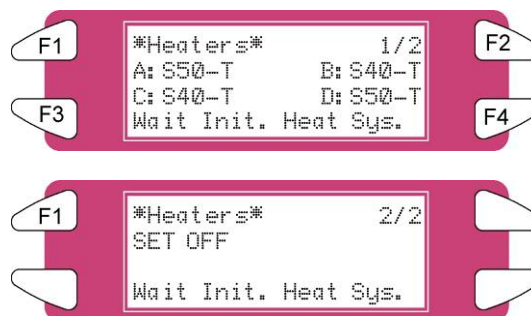
While printing, the heater values can be changed. For example: when noticing cockling.

Please follow the steps below to adjust the heater temperatures.

- Step 1 :** Press the [F3] key



- Step 2 :** Following screen will be displayed



- Step 3 :** Change the value of one or more heaters or switch them all off.

#### ⚠ Notes ⚠

For more details about heater adjustment, please refer to “Controlling the heater elements on the Spitfire Extreme printer”

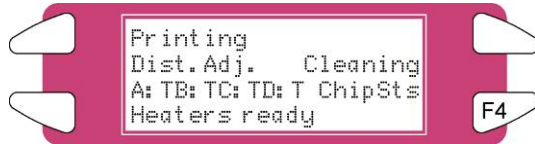
#### [F4] - Loading ink volume during printing

It is possible to load ink volume to the printer during printing.

There are two possible scenarios:

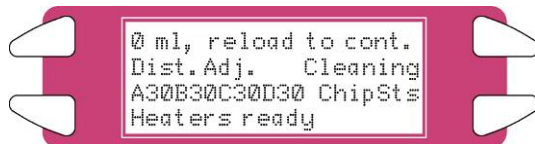
- SmartChip management system is not empty yet and the printer keeps printing.

Press the F4 key to load ink volume.

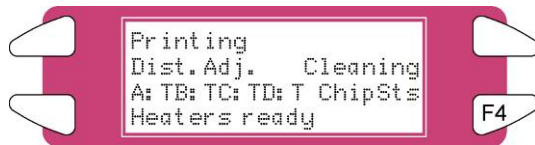


- SmartChip management system is empty and the printer stops printing but does NOT cancel the print.

The following message will appear



Press the F4 key to load ink volume.



#### **⚠ Notes ⚠**

- Please refer to chapter 4.10 to load ink volume properly.
- Please note that the heaters will switch off after 15 minutes. After that point you will have to reconfigure the heaters manually before resuming the print job. This is the same behaviour as when a cassette gets empty.

## 6.4 OPERATION PANEL AFTER PRINTING

The operations performed after printing, are described here.

### 6.4.1 Cut off media with the printer knife

The media cutting procedure is described below.

Roll media is automatically cut after printing when "Auto" is set on the cut media menu and roll media has been set.

When the operation panel is in the main screen, and the product is in the following conditions, the media can be cut on the desired position:

- When roll media has been set:
- If "OFF" is set on the cut media menu
- If "Take Up Roll" has been set in the media detection setup menu
- When sheet media has been set

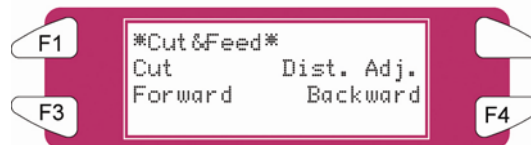
Follow the steps below to cut the media.

Follow the steps below to cut the media.

**Step 1 :** Make sure that the MEDIA SET lamp on the operation panel is off.



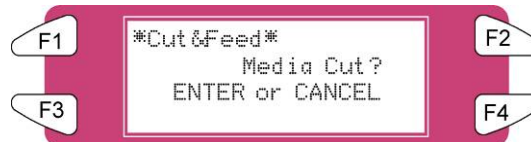
**Step 2 :** Press the [F1] key on the operation panel to shift to the cut and feed menu.



**Step 3 :** Feed media to the desired position using the [F3] and [F4] key.



**Step 4 :** Press the [F1] key to cut the media.



I) Press the [ENTER]-key to cut the media or the [CANCEL]-key to abort this operation.

#### ⚠ Notes ⚠

If the front edge of the roll media is not straight when you load new roll media, you should cut its edge. Cutting blades are consumable. Replace them at regular intervals following "Replacing the cutting blade".

## 6.4.2 Manually cut off media

This section explains how to cut the media manually.  
When "Manual" is set in the media cut menu, the media can be cut manually.  
Cut the media according to the following procedure.

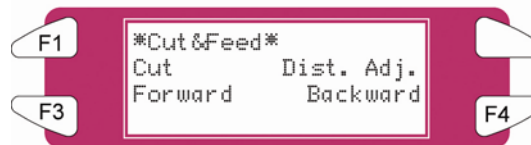
**Step 1 :** Make sure that the MEDIA SET lamp on the operation panel is off.

⚠ Notes ⚠

After printing, the media is automatically transferred to the media cutting position.



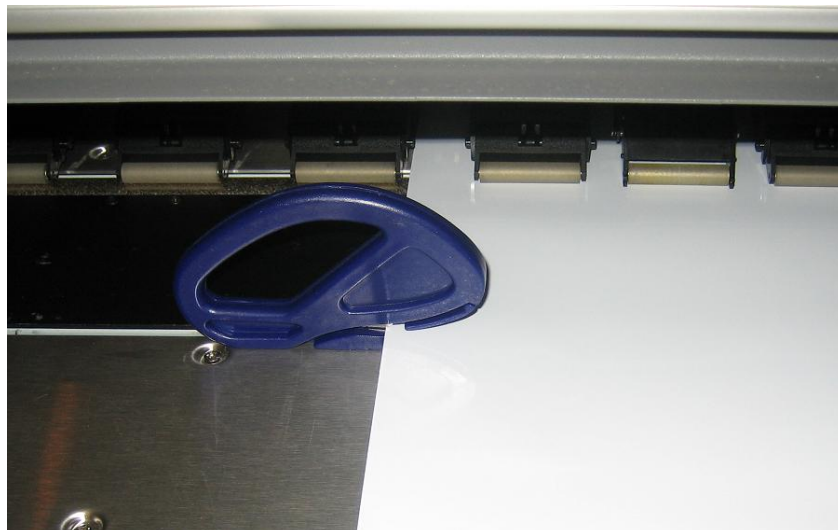
**Step 2 :** Press the [F1] key on the operation panel to shift to the cut and feed menu.



**Step 5 :** Feed media to the desired position using the [F3] and [F4] key.



**Step 3 :** Cut the roll media following the cutting groove.



## 6.5 MENU OVERVIEW (1/7 – 7/7)

### SetupMenu 1/7

Ink Status

Origin Set	(1/1)	Top Bottom Left Right						
Test Print	(1/2)	Setup Adj. Uni-D Nozzle Check Adj. Bi-D						
	(2/2)	Palette Maintenance						
Media Set	(1/1)	Media	(1/2)	User 1 User 2 User 3 User 4	(1/3)	Ink Dry Time Head Height	(1/1)	Low Middle High
						Stiffness	(1/1)	Soft Normal
			(2/2)	User 5 User 6 User 7 User 8	(2/3)	Thickness Heater Drier Fixer PostFixer		
					(3/3)	Hstatus Dist.Adj	(1/1)	Print 1 Print 2 Change
		Cut Size	(1/1)	Auto Length Width				
		Top Feed Media Cut	(1/1)	Off Auto Manual				

### SetupMenu 2/7

Print Mode	(1/1)	Prn Mode 1 Prn Mode 2 Prn Mode 3 Prn Mode 4	(1/2)	Condition	(1/5)	360 x 360 720 x 360 360 x 720 Diag 720 720 x 720 1080 x 1080 1440 x 720 720 x 1440 Diag 1440 1440 x 1440 2160 x 1080 1080 x 2160 Diag 2160	1pass 2pass 2 pass 1pass 2pass 1pass 2pass 2 pass 2 pass 4 pass 4 pass 4 pass 4 pass	1pass few 4pass 4 pass 1pass few 4pass 1pass few 4pass 4 pass 4 pass 4 pass 4 pass 4 pass
					(2/5)			
					(3/5)			

				(4/5)	2880 x 1440	4 pass	
					1440 x 2880	4 pass	
					Diag 2880	4 pass	
				(5/5)	540x720	2 pass	4 pass
		Direction		(1/1)	UniDir		
					BiDir		
		Repeat Prn		(1/1)	Count		
					IntervalTime		
		HeadSpeed		(1/1)	Normal		
					Fine		
		(2/2) Weaving		(1/2)	Sign/Quality		
					Picture/Speed		
				(2/2)	Stitch		
					Classic		
					OFF		
		ScanWidth		(1/1)	DataWidth		
					MediaWidth		
					FullWidth		
Command	(1/1)	Step	(1/1)		0,010 mm		
					0,025 mm		
		Resolution	(1/2)		360		
					600		
					720		
					1080		
			(2/2)		1200		
					1440		
					2160		
					2880		
Layout	(1/1)	OnlineTimer					
		Joint	(1/1)		ON		
					OFF		
		CutPosition	(1/1)		Standard		
					Data		
Function	(1/1)	CMY > K	(1/1)		No		
					Yes		
		Scale					
		Mirror	(1/1)		OFF		
					Y on		

### **SetupMenu 3/7**

Roll Setup	(1/1)	Disable	
		Roll 1	
		Roll 2	
		Roll 3	
Centro	(1/1)	Centro	
		BiCentro	
Network	(1/1)	Ipadress	
		SubnetMask	
		GateWay	

## **SetupMenu 4/7**

Utility	(1/3)	ErrorDisp	(1/1)	OFF ON
		PaperDet,	(1/2)	Normal OFF TakeUpRoll RollFeed
		OnCleaning	(2/2) (1/1)	Prn+Wipe OFF Normal Little Powerfull
	(2/3)	Width Prn + Wipe Smart Top	(1/1)	OFF On Waiting Before Print Printing
		AutoCleaning	(1/1)	
	(3/3)	CapCycle SlantCheck	(1/1)	ON OFF
	(1/2)	WriteMode	(1/1)	OFF Write+RN Write>PRN WriteOnly
		Reprint Delete Rename Format	(1/1)	No Yes
	(2/2)			
Initial	(1/3)	All	(1/1)	NO OK
		MediaSet	(1/1)	NO OK
		PrintMode	(1/1)	NO OK
		Command	(1/1)	NO OK
	(2/3)	LayOut	(1/1)	NO OK
		Function	(1/1)	NO OK
		RollSetup	(1/1)	NO OK
		Centro	(1/1)	NO OK
	(3/3)	Network	(1/1)	NO OK
		Utility	(1/1)	NO OK
		FileMng	(1/1)	NO OK



### **SetupMenu 5/7**

DataDump	(1/1)	Start/End All		
InkManager	(1/2)	HeadWash	(1/1)	NO YES
		InkLoad	(1/1)	Pump1 Pump2 ALL
		InkChange	(1/1)	NO YES
	(2/2)	LongStore	(1/1)	NO YES
		InkSupply	(1/1)	ON OFF
		ChipMgr	(1/1)	Printer Cassette
		ColorMode*	(1/1)	2*4_symm 1*6 1*8 2*4_1C1H

(\*) Only visible when printer mode is activated in the ChipMgr. menu.

### **SetupMenu 6/7**

H.Unlock	(1/1)	No Yes
WiperClean	(1/1)	No Yes
TankChg. TubingFlush		Head1-2

### **SetupMenu 7/7**

VersionCheck



